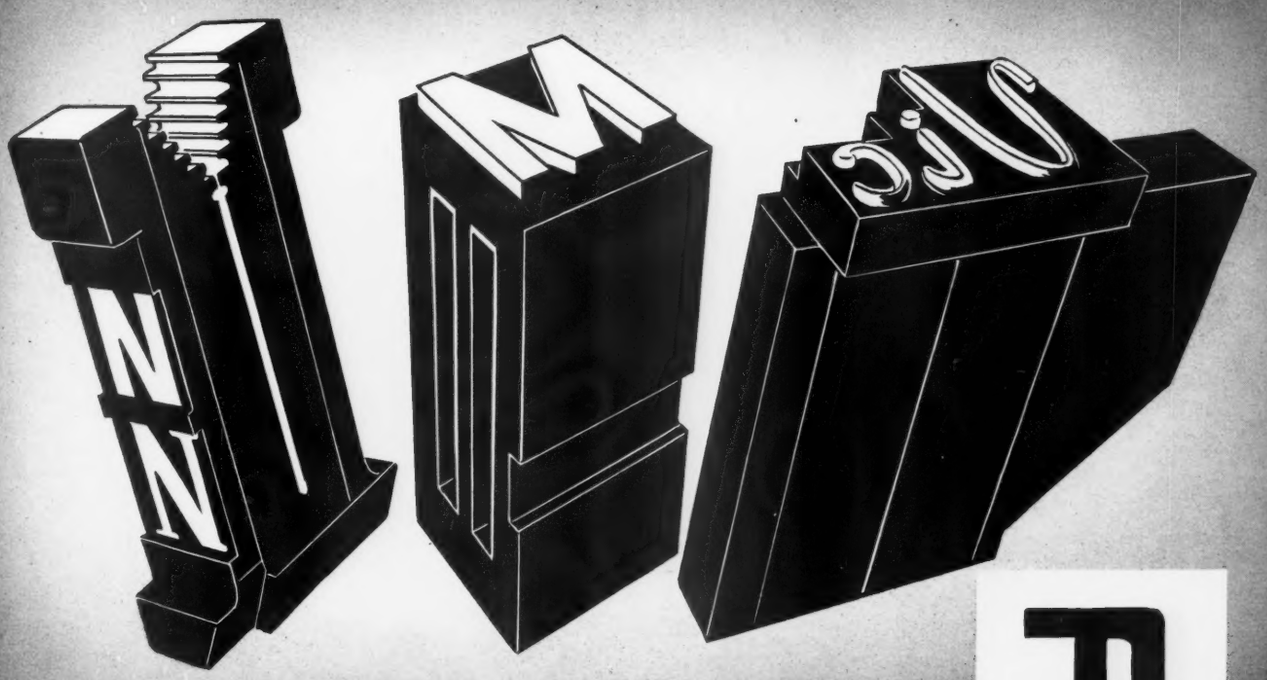
PRINTING EQUIPMENT ENGINEER

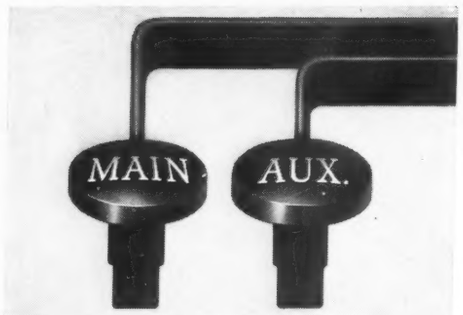


AUGUST 1938

TECHNICAL PUBLICATION FOR PRODUCTION AND MECHANICAL EXECUTIVES IN THE GRAPHIC ARTS INDUSTRY

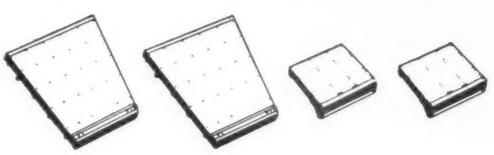
TRADE LINOTYPE MARK

EIGHT MAGAZINES AND



Four of them are always at the operator's finger-tips with . . . . . ***Quick Mixing***

The other four always ready to be instantly rushed to his finger-tips with . ***One-Turn Shift***



ON MODEL 30 MIXER LINOTYPE

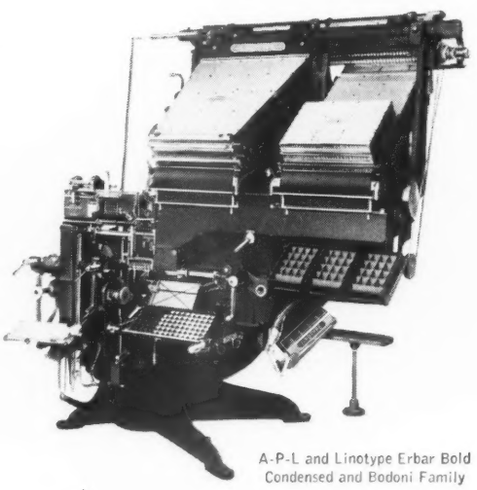
Each one is important . . . the Eight Magazine Capacity, the Linotype Quick Mixing, the One-Turn Shift. But team them together and you have a trio that can't be beat. And they're all on Model 30 Linotype, waiting to cut your production costs to a minimum.

Quick Mixing between any pair of adjoining magazines! It's done *instantly* by the touch of a key which is conveniently located at the side of the keyboard. The ONE-TURN SHIFT is *always* ready to whisk another pair into operating position.

It means you can set roman, *italic*, **bold face**, ***bold face italic***, SMALL CAPS, and even advertising figures in a single line . . . and nearly as fast as you can set straight matter.

It means you can set caps and lower case from two auxiliary magazines.

It means that frequent alternation of faces (*even if not mixed*) can be accomplished with considerable saving of time.



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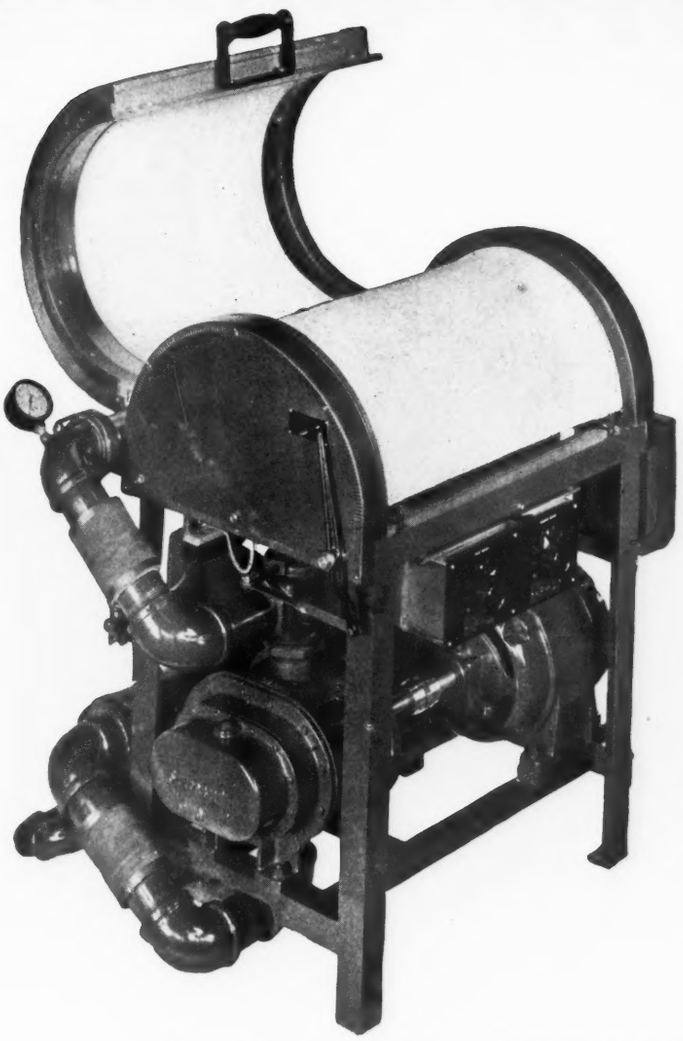

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have changed to *Minimum Width Newsprint* and with Stahi Formers, enjoying *Uniform Casting Levels, reflecting Quality Printing,* at maximum dry-mat shrinkages. Effecting unusual economy in newsprint, with trouble free Stahi-mat routine.

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Easy To Produce

In composing room and typographic service house of Edwin H. Stuart, Inc., Pittsburgh—All material brought to compositor

By MAC SINCLAIR

IN THE mind of Edwin H. Stuart, a composing room is a studio. In it the creative instinct of the layout man and the interpreting of the layout man's ideas by the compositor are paramount. Without opportunity for exercising the creative idea or to permit that expression in the form of Art, the Stuart Studio would still be an efficient composing room because manufacturing principles have been given serious consideration to the nth degree. This has been accomplished without in any way diminishing the importance of the human element—in fact, the blending of both is a happy combination in the Typographic Service House of Edwin H. Stuart, Inc., Pittsburgh.

This story deals only with some production highlights of interest to composing room executives. As a visitor, however, even though you are familiar with composing room operation, perhaps you would not be particularly impressed when you first stepped into the Edwin H. Stuart composing room. As you look around and become familiar with the planning of the room, it becomes evident that equipment and the tools with which compositors work have been so arranged that not the least ounce of energy is expended by the compositor in non-productive work. The reason is that, virtually, the work is brought to the man.

Don't Watch the Men

Another impression that will come to you after having become familiar with the department is that in direct violation with the trend in many composing rooms, no provision whatever is made for an unobstructed view across the room by the supervising executive. Material racks rise above the type cabinets and work tops so compositors need not step more than three feet for any of the materials needed to complete the job at hand. When asked in a rather critical manner about the "blind spots" which prevent an unobstructed view across the room by the supervising executive, Mr. Stuart asserted: "It makes no difference, because we pay our men above prevailing wage scale and we hire none but dependable craftsmen who need no watching. Most of our men have been with us from 12 to 16 years and the plan has worked advantageously for the men and ourselves."

Some of the ideas in effect in the Stuart composing room are not employed regularly in the composing rooms of commercial and newspaper printing plants. Not only is it essential for the trade typographer to stock and maintain new type faces, he also creates and employs all worth while production ideas. He must furnish not only up-to-date and artistic typography, but it must be furnished at an attractive price to the printer who is the potential owner of a composing room or who at least knows a great deal about composing room operation.

Left: Edwin H. Stuart, President, and right: George Kinnard, Treasurer, of Edwin H. Stuart, Inc., Typographic Service, Pittsburgh, Pa. Both of these gentlemen established the business in 1920. Mr. Stuart is well known throughout the country as a persistent promoter of the business with which he is associated—in other words, he believes printers should take some of their own medicine and advertise. He is editor of Typo Graphic, *an extremely interesting house organ devoted to the business and advertising promotion in general. Claims* Typo Graphic *is first of its kind to be published (now in its eighteenth year).*

George Kinnard, Mr. Stuart's associate, is a graduate of Carnegie Tech.—completed course under Harry L. Gage, now Vice President of Mergenthaler Linotype Company. Stuart proudly states Kinnard is one of the greatest advertising typographers in the world; skilled in the handling of all kinds and weights of type from all periods; freely credits Kinnard for the devices discussed in this article. When not designing typography, Kinnard likes to fuss with things which will improve production.

Fig. 1.—View in hand composition section of Stuart Typographic Service, Pittsburgh. The Monotype section is not shown. One hundred complete series of type-faces, Monotype and foundry-cast are carried. Storage of Monotype-cast type is contained in 11,000 storage boxes. Type ranges from 6 pt. to 36 pt. Type storage from 42 pt. to 72 pt. is kept on galleys in a special cabinet. Galleys are supported in inclined position and each is fitted with closed-in end to which is attached a drawer-pull.

All Material Brought to Compositor

Composing room operation is best served by seeing that compositors waste a minimum of time on non-productive work. Of course, in the planning of production work it is not possible to bring the work to the man in the sense that prevails in the automobile industry, but it is possible to arrange the type and spacing elements at the compositors' cabinets to eliminate nonproductive movements. Then, too, it is a costly and wasteful practice to compel a $60-a-week compositor to refill type, rule and quad cases and racks, or to hunt needed material when it is possible to engage lower priced help for the purpose.

The Page Frame

In describing some of the production ideas in the Stuart establishment, it might be well to state that after receiving copy, the compositor first goes to a mitering machine and cuts four pieces of mitered page frame furniture. This material is 12-pt. body, is type-shoulder high and is cast in the Monotype room. The side of each piece of the frame is recessed to permit the compositor to tie with string the four frame pieces in rectangular shape (or whatever the area of the job happens to be). This frame provides the exact space in which the job is to be set before the compositor commences composition or assembly, as the case may be.

(Continued on Page 40)

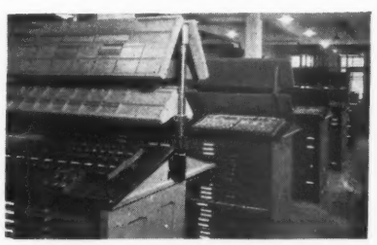
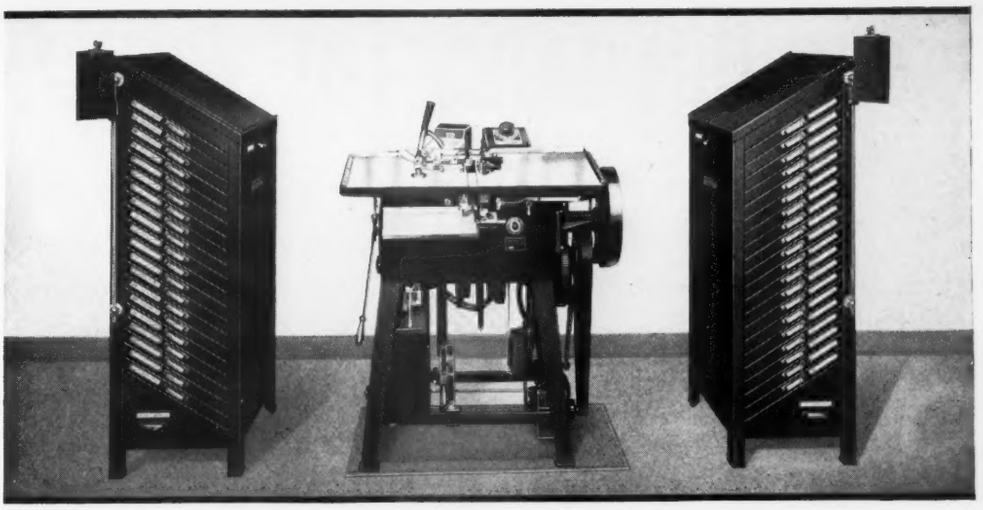


Fig. 2.—View showing detail of type cabinets, elevated material banks and compositors' work tops in plant of Edwin H. Stuart, Inc., Pittsburgh. When asked rather critically about the lack of clear view across the room by supervising executive, Stuart replied: "It makes no differeace—we pay our men above prevailing wage scale and we hire none but dependable craftsmen who need no watching."



Proved by Experience....

The Ludlow is in successful practical use in thousands of composing rooms all over the world.

These plants are constantly evidencing their satisfaction with actual results on their job and display composition, by supplementing their Ludlow equipment with additional fonts and machines, which are being continually modernized and improved.

And the number of Ludlow-equipped composing rooms is constantly increasing, making possible the active sustained program of type design and matrix production, which makes the newest typefaces available when they are needed. This volume of business also justifies the active research which results in continuous modernization and improvement of the equipment.

The widespread satisfaction with the Ludlow as a tool for producing that wide and varied range of composition which can best be set by hand, is due in large part to the simplicity of operation and mechanism which always has been, and will continue to be, a cardinal feature of the Ludlow. Its makers have steadfastly rejected dozens of proposals for making the Ludlow a complicated piece of machinery requiring constant attention to maintain it in successful operation.

They have steadfastly kept the Ludlow the simple tool for the hand compositor, developed for most efficiently meeting the practical requirements of job and display composition.

Whether it be in the far-off mountains of the Philippine Islands, or in the composing room of New York's fastest-moving newspaper, the Ludlow performs successfully day after day under the most widely varied demands and conditions.

When you install Ludlow equipment for job and display composition, you are taking no chances either on the machine or on the adequacy of the matrix resources—in typefaces modern and traditional, roman, italic or script. Five popular scripts, for example, are now available for Ludlow slug-cast composition.

So we repeat, you can depend upon the Ludlow for meeting the requirements, both present and prospective, of job and display composition.

Full information regarding features of the Ludlow system which are responsible for its whole-hearted endorsement by users will be gladly sent you on request.

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From the handling of the fresh paper roll to the final folding of the paper, including even the plate-making operations, Hoe can handle the whole job. This insures a perfect coordination of the various mechanical steps required in the production of a newspaper. It fixes the responsibility for the complete equipment in a single plant... the Hoe plant... the largest printing press plant in the world. It's a fine way for the mechanical executive to relieve himself of much unnecessary trouble and worry.

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The Hoe three-arm reel makes handling the paper roll effortless. It is coordinated efficiently with Hoe electrically-controlled, full-automatic Tensions and completed by the simplified Hoe full speed Paster.

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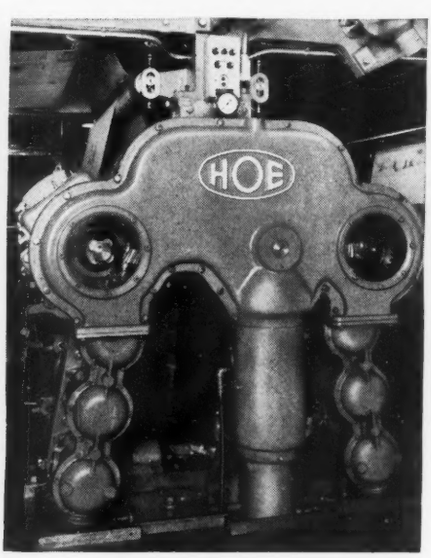

The original anti-friction newspaper press, the Hoe arched-type Super-Production Unit, leads the parade. It is designed and built to the rigorous standards which have established the Hoe reputation.

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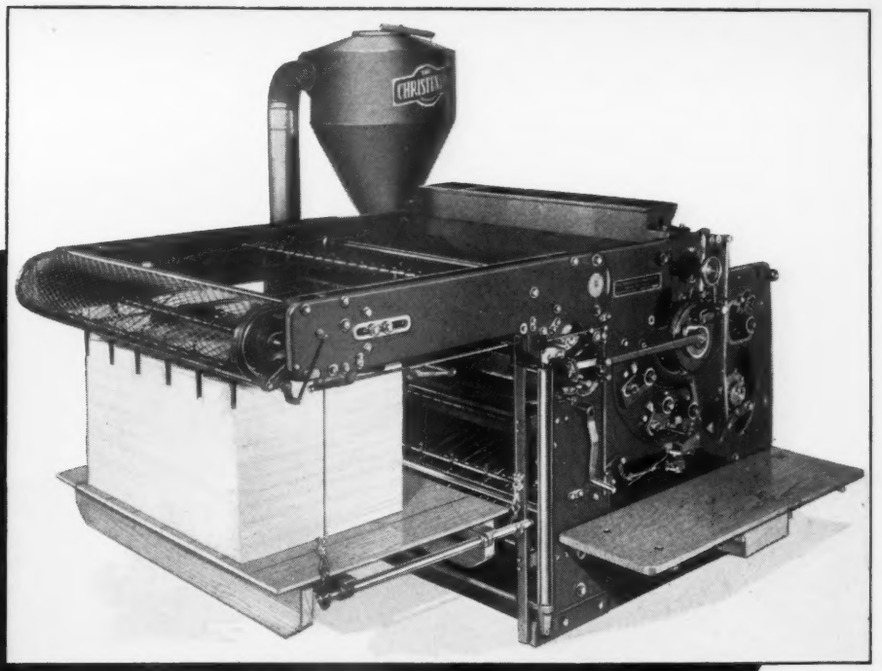
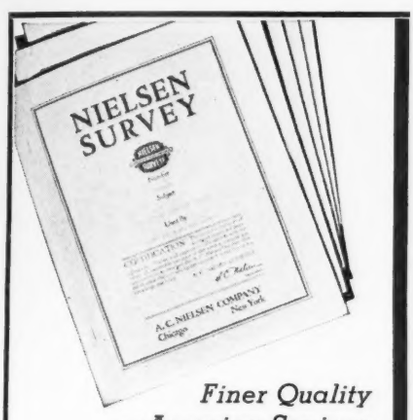


You turn out perfect bronzing jobs sheet-for-sheet with your fastest presses

with the Christensen High-Speed Bronzer



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proven in certified reports of surveys by the A. C. Nielsen Company.

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Send for these free reports on the new bronzing standards set by Christensen equipment.

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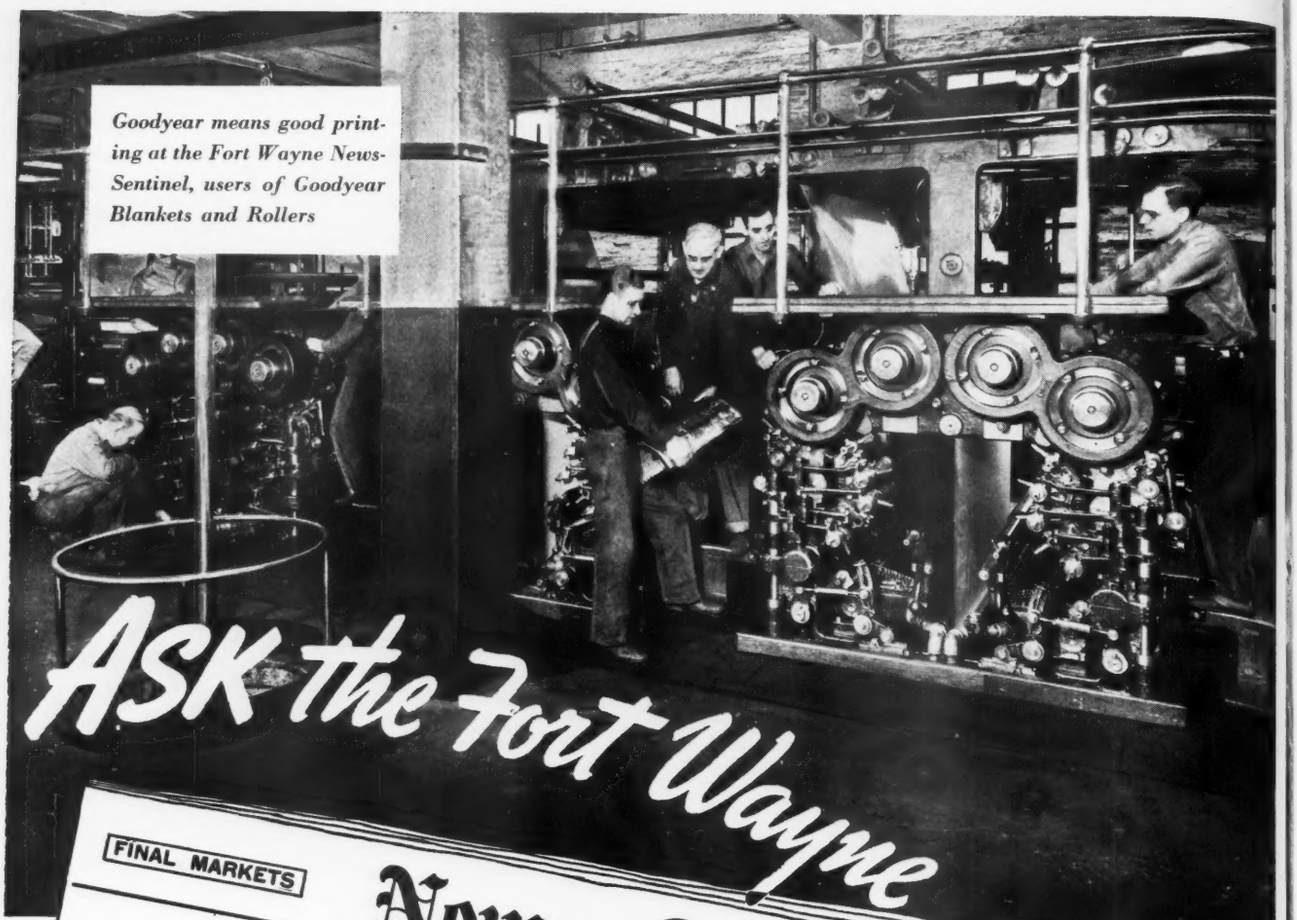
Christensen *High-Speed* Bronzer



Goodyear means good printing at the Fort Wayne News-Sentinel, users of Goodyear Blankets and Rollers

ASK the Fort Wayne News-Sentinel

FINAL MARKETS

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TWO things go a long way towards making the Fort Wayne News-Sentinel the exceptionally well-printed newspaper it is. A veteran pressroom crew—and Goodyear Press Blankets.

Both Goodyear Felt Blankets and Goodyear *Red Top* Underblankets are used on the News-Sentinel presses for these important reasons:

THEY DO NOT BOLSTER, CRACK OR PEEL
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THEY DO NOT WALK FROM CENTER
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Goodyear Blankets print both type and cuts *sharper* and *clearer* with *uniform clear impression* — and they last longer. The best proof of that is the steadily increasing number of newspapers changing to Goodyear Blankets. Let us show you why they will give you better printing *at less cost!* Write Goodyear, Akron, Ohio, or Los Angeles, California.

MORE NEWSPAPERS ARE PRINTED ON GOODYEAR *RED TOP* UNDERBLANKETS THAN ON ANY OTHER KIND

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GOODYEAR

Printing Equipment Engineer

Trade-Mark Registered U. S. Pat. Office

August, 1938

Volume 56 No. 5

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A Technical Publication for the Mechanical Executive Responsible for Printing Production, Equipment and Supplies in the Commercial, Magazine, Private Plant and Daily Newspaper Field.

Published by Don Will • Edited by Mac Sinclair

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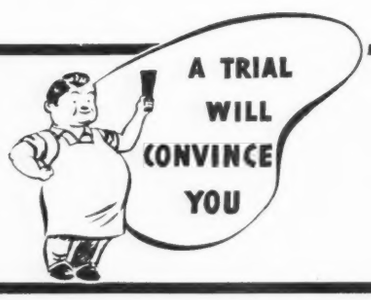

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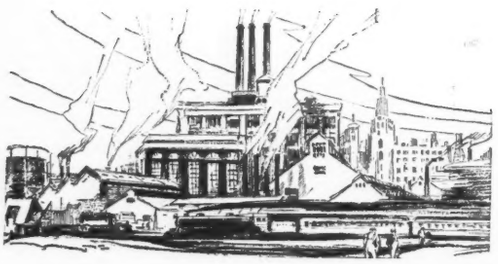
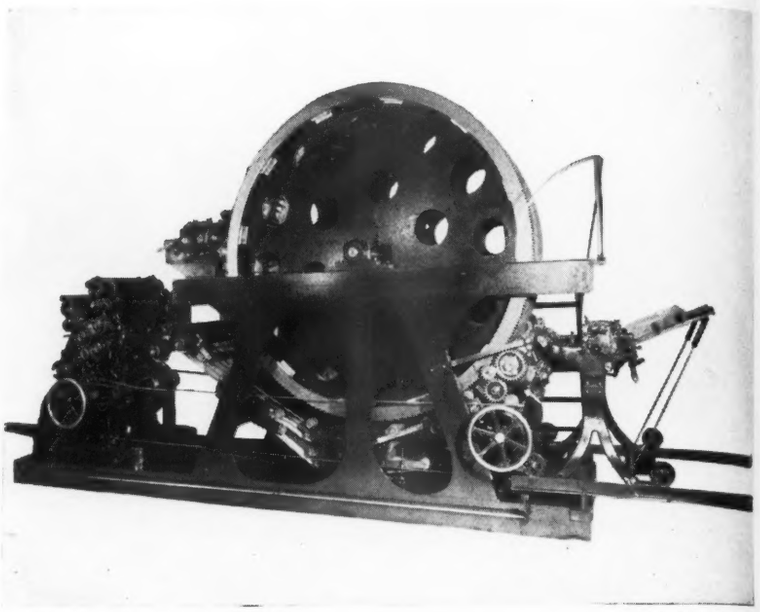
on rotary sheet presses





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Printing cut sheets of paper on this Rotary Sheet Press calls for endurance, inherent alignment, precision and long life from the bearings on its 8' x 20" drum.

It needs *endurance* for those rush jobs that tax printing equipment to the limit . . . *precision* to assure close register and uniform application of ink . . . *high capacity* to give long carefree life at low operating costs.

That all these factors are combined in SKF Spherical Bearings is proved by their performance records not only on this press, but on giant newspaper presses, engraving machinery —printing equipment of every type. When you specify SKF, you specify PROFITS.

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Whether Your Press Problem is Straight Black Production or Color—the Printing of a Great Metropolitan Daily or a County Seat Weekly, You Owe it to Yourself to Carefully Study the Potentialities of these Presses.

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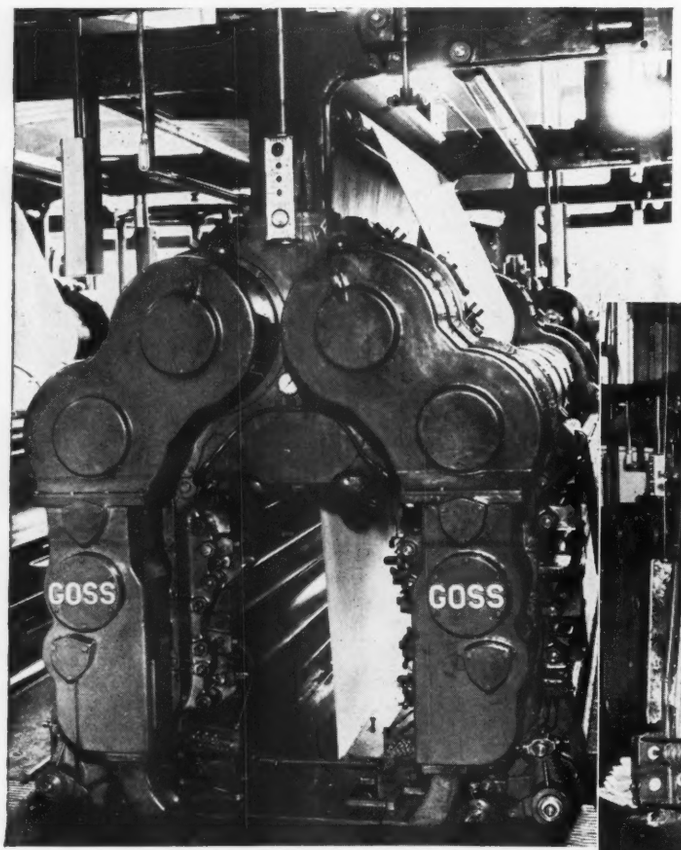
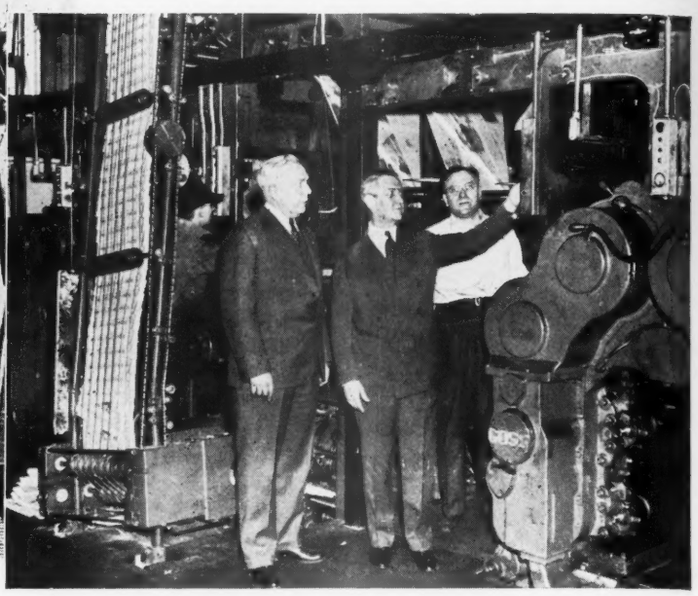
ALL PLATE AND IMPRESSION CYLINDERS ON TIMKEN BEARINGS



One of the eight Timken Bearing Equipped Goss units as installed in the press room of the Buffalo Evening News.



Left to Right—L. W. Woelfel, Mechanical Superintendent; E. H. Butler, Publisher, and George Haas, Press Foreman, of Buffalo Evening News.

The new eight-unit Timken Bearing Equipped battery designed by the Goss Printing Press Company went into service March 17 for the Buffalo Evening News. This press weighs 325 tons and is 95 feet in length. The Timken Bearing Equipped cylinders run at a normal speed of 416 revolutions per minute, equivalent to 50,000 – 48 page newspapers per hour, or 60,000 per hour at maximum speed.

Since the printing and impression cylinders are mounted on TIMKEN Tapered Roller Bearings maintenance of operating precision is assured—even in the face of high speeds. Friction is reduced to the vanishing point. In fact it is reported that unless brakes are applied the units will run for nearly ten minutes on their own momentum. Printers who want this kind of performance in the equipment they buy should specify "Timken Bearing Equipped".

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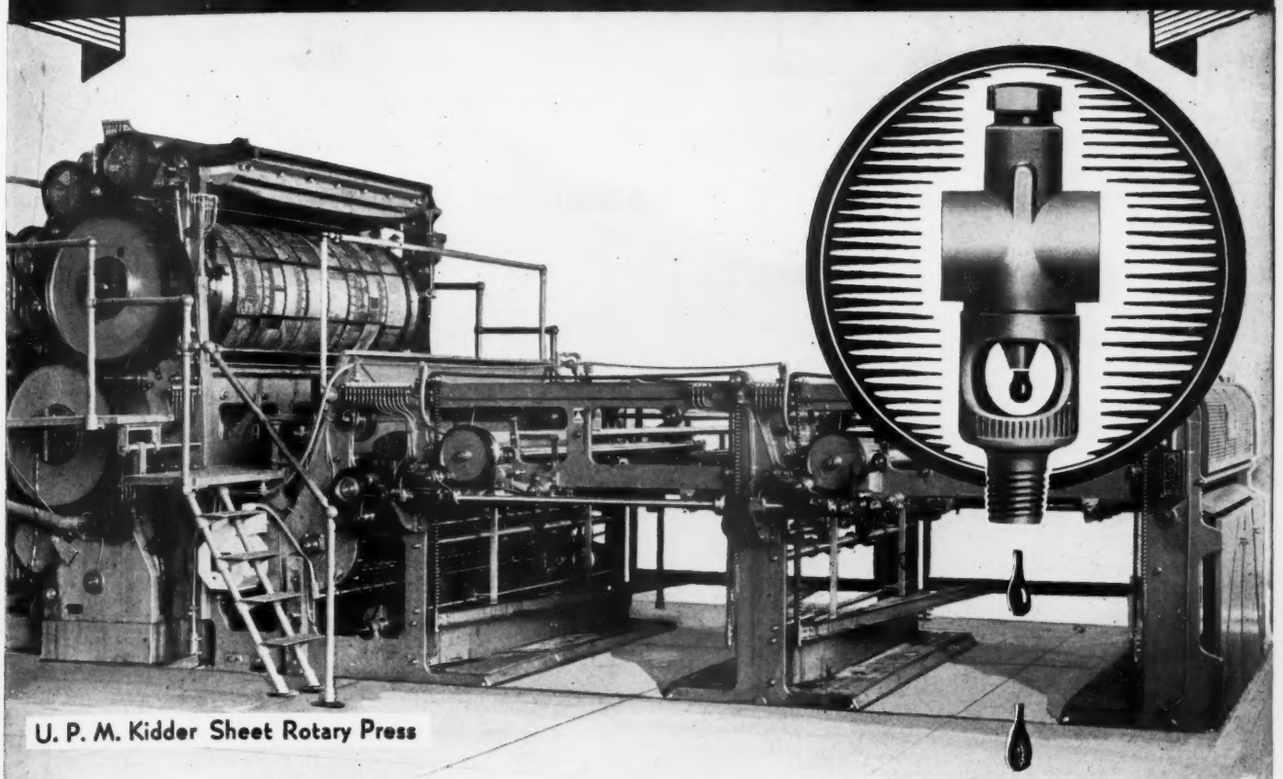
Manufacturers of TIMKEN Tapered Roller Bearings for automobiles, motor trucks, railroad cars and locomotives and all kinds of industrial machinery; TIMKEN Alloy Steels and Carbon and Alloy Seamless Tubing; TIMKEN Rock Bits; and TIMKEN Fuel Injection Equipment.

TIMKEN
TAPERED ROLLER BEARINGS

AUTOMATIC OIL LUBRICATION



U. P. M. Kidder Sheet Rotary Press

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PULSOLATOR AUTOMATIC LUBRICATION

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Pulsolator Automatic Oil Lubrication is used as standard equipment by leading printing press builders and is installed on existing plant equipment by cost-minded printers.

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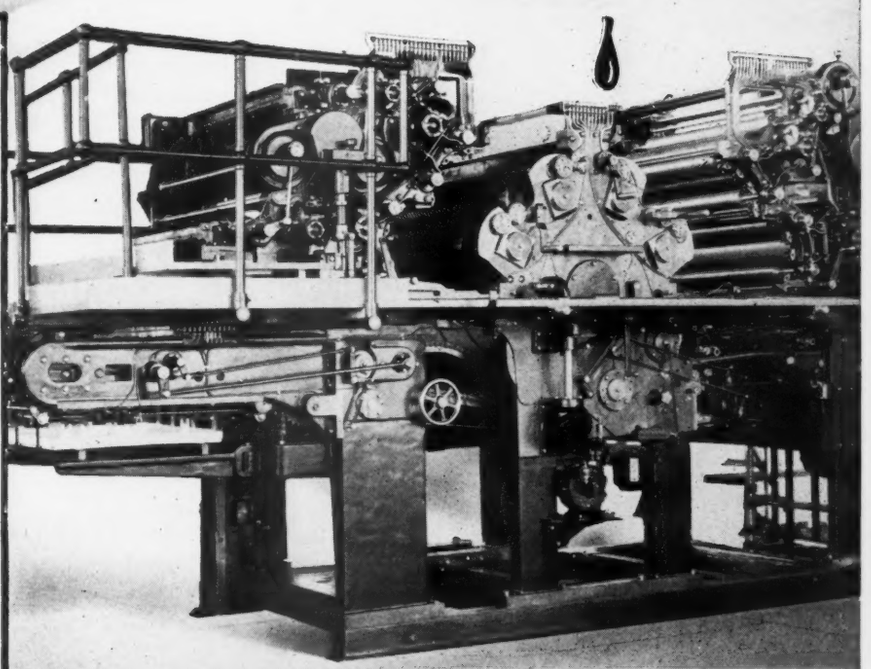
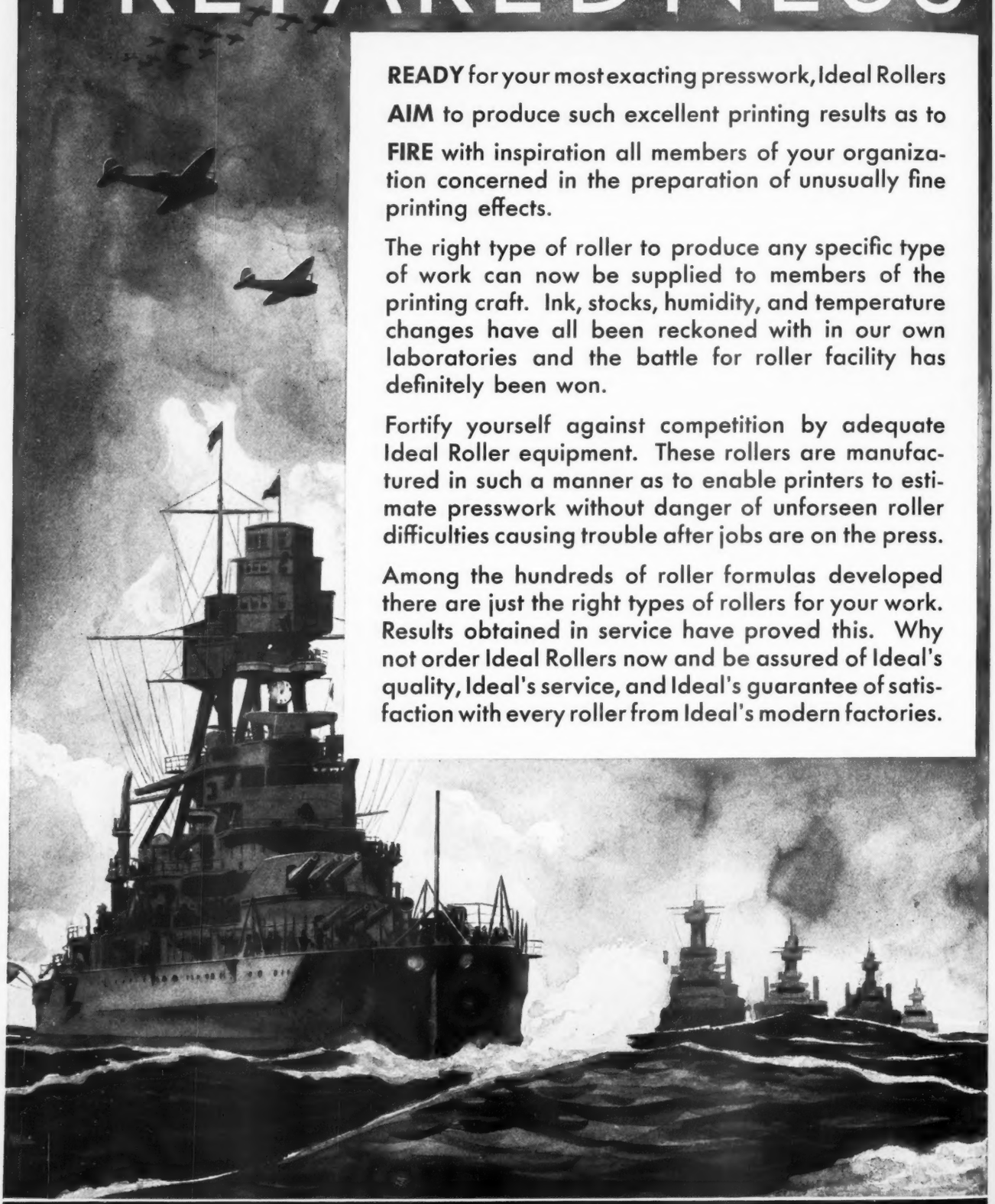


Cottrell 4-Color Rotary Sheet Feed Press

BLANCHARD PULSOLATOR

PREPAREDNESS



READY for your most exacting presswork, Ideal Rollers

AIM to produce such excellent printing results as to

FIRE with inspiration all members of your organization concerned in the preparation of unusually fine printing effects.

The right type of roller to produce any specific type of work can now be supplied to members of the printing craft. Ink, stocks, humidity, and temperature changes have all been reckoned with in our own laboratories and the battle for roller facility has definitely been won.

Fortify yourself against competition by adequate Ideal Roller equipment. These rollers are manufactured in such a manner as to enable printers to estimate presswork without danger of unforseen roller difficulties causing trouble after jobs are on the press.

Among the hundreds of roller formulas developed there are just the right types of rollers for your work. Results obtained in service have proved this. Why not order Ideal Rollers now and be assured of Ideal's quality, Ideal's service, and Ideal's guarantee of satisfaction with every roller from Ideal's modern factories.

IDEAL ROLLER & MANUFACTURING CO.

Branch sales offices are located in the principal cities

CHICAGO, ILLINOIS · · · LONG ISLAND CITY, NEW YORK

Another revolutionary NEW *achievement by* CRAFTSMEN!

The new "SUPERIOR" *Mitering Machine*

With the MIRACLE TILT-LEVER Bed Lock

Price Complete

$35.00

MORE for your money

because . .

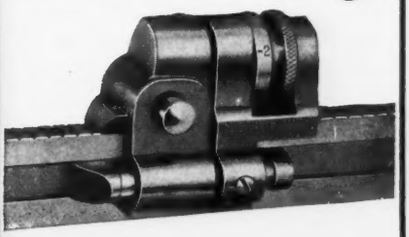
- Built from finest castings and tool steel by engineers of proven ability.
- Embodies improved features never before obtainable.
- More accurate—more versatile than any hand mitering machine on market—regardless of price.
- Priced well within demands of even the smallest shop.

Here are a few "SUPERIOR" features that make the New "SUPERIOR" Mitering Machine indispensable to every printer

- NEW ANGLE BED LOCK with visible tilt lever—eliminates pull and strain—simplifies operator's work. To change angle, merely tilt lever and swing holder to desired degree. Holder locks in *eleven* different positions.
- NEW IMPROVED GAUGE BAR—both right and left angle corners can be mitered without changing the slide. Takes up to 86 picas.
- NEW IMPROVED PRECISION GAUGE instantly set and self-locked by "Finger Touch" method. Any variance of points up to 86 picas obtained by Micrometer gauge—one notch giving one point variance.
- NEW IMPROVED KNIFE HOLDER. Has two adjusting screws and is absolutely foolproof. Knife is made of finest Swedish tool steel and will stand hardest service.

Send for our circular today —Use the prepaid return card on page 71

Improved "FINGER TOUCH" Micrometer Gauge



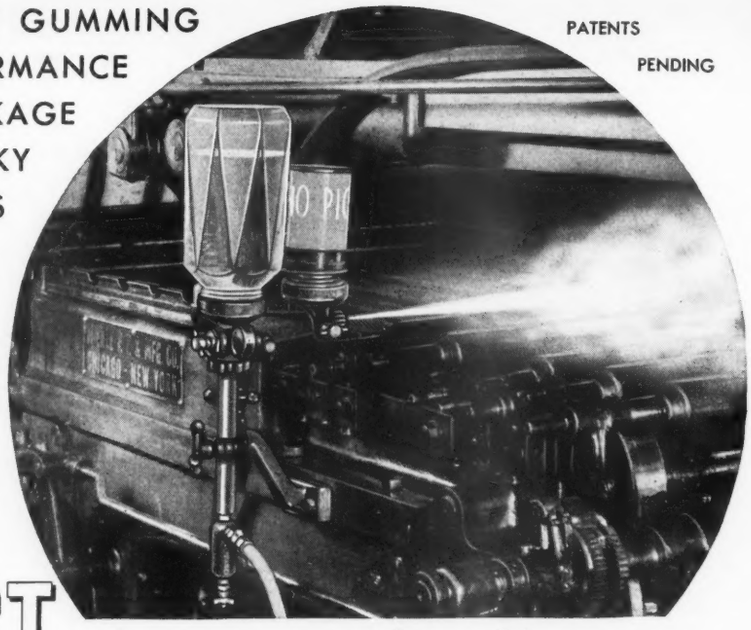
Accurate to the nth degree!

A marvel of mechanical simplicity that gives "finger touch" control and instant adjustment up to 86 picas. No time-wasting lock nuts to fool with. No complicated parts to get out of order. Absolute accuracy—effortless operation. Beautifully machined with all the precision of a fine watch!

CRAFTSMEN MACHINERY COMPANY

307 Atlantic Ave. **Boston, Mass.**

PREVENTS VARNISH GUMMING
NEW ROLLER PERFORMANCE
LESS ROLLER SHRINKAGE
KEEPS ROLLERS TACKY
IMPROVES HALFTONES
HELPS OVERPRINTING
ELIMINATES MOTTLE
PREVENTS PICKING
KEEPS FORMS CLEAN
REDUCES STATIC
PERFECTS SOLIDS



PATENTS PENDING

FRAPOMIST *the original roller spray*

Now sold by Sam'l. Bingham's Son Mfg. Co.

FRAPOMIST—the original roller spray—has received the highest endorsement possible by leading manufacturers of graphic arts equipment—that of imitation. Basic advantages, however, remain exclusively with FRAPOMIST. Among these is the "C" Auxiliary, illustrated, which introduces a selection of oil preparations which add immeasurably to printing excellence. This has not yet been copied.

SAM'L. BINGHAM'S SON MFG. CO.
CHICAGO · CLEVELAND · DETROIT
DES MOINES · DALLAS · HOUSTON
ATLANTA · INDIANAPOLIS · ST. LOUIS
SPRINGFIELD, OHIO · KALAMAZOO, MICH.
KANSAS CITY, MO. · MINNEAPOLIS
NASHVILLE, TENN. · PITTSBURGH
OKLAHOMA CITY

ROBERT R. WORTMAN, CINCINNATI

WESTERN NEWSPAPER UNION,
SALT LAKE CITY, UTAH

E. H. WALKER SUPPLY CO., WASHINGTON, D. C.

JOHN FARNSWORTH, PHILADELPHIA

KRUG ELECTRIC CO., G. H. GREBE (EXPORT)
NEW YORK CITY

TORONTO TYPE FOUNDRY CO., LTD., CANADA

SMYTH-HORNE, LTD., LONDON, ENG.

Through their sixteen factories—in addition to the other distributors shown at the left. These organizations undertook FRAPOMIST distribution because it adds new and vital qualities to letterpress ink distribution—because it eliminates common roller and inking troubles . . . FRAPOMIST lubricates and preserves the surface of the roller—and that function, simple as it is, accomplishes what seem to be miracles in printing quality and roller performance . . . less roller trouble in scorching summer heat . . . no more ugly mottle in delicate color solids . . . no more picking . . . no more constant wash-ups, because FRAPOMIST keeps dirt and lint in the ink and off the form . . . less roller penetration by inks to bleed later into light colors . . . no more ink-pitted roller ends when small forms are run . . . Every claim can be substantiated . . . ask the FRAPOMIST distributor nearest you . . . or write direct for full details and proof of FRAPOMIST benefits.

Frazier Processes Incorporated

50 CHURCH STREET, NEW YORK • 728 SOUTH DEARBORN STREET, CHICAGO

Vol. 56, No. 5. *Printing* EQUIPMENT *Engineer* August, 1938

Craftsmen

Meet in Boston on 300th anniversary of Stephen Daye Press—International printing exhibit and educational program.

ONE of the dominant features, if not the most important, at the Nineteenth Annual Convention of the International Association of Printing House Craftsmen to be held at Hotel Statler, Boston, on August 14, 15, 16 and 17, will be the exhibit of foreign and American printing. Chairman Elmer Lipset and his Prin ing Exhibit Committee have been collaborating with General Chairman Phil McAteer in the preparation of the exhibit. A great deal of time and money have been spent getting ready for what is said to be the finest exhibition of printing ever arranged in America. The exhibit will be held in the foyer of the Statler ballroom.

KEEPSAKE BOOK

"Keepsake Book of Old New England" is the title of a keepsake book which has been specially prepared for and will be presented to each visiting delegate to the Boston Convention of the International Association of Printing House Craftsmen to be held at Hotel Statler, August 14 to 17, inclusive.

The book has been prepared under the direction of George Trenholm and ten New England printers have cooperated in its production. It is expected that the book will be a worthwhile collector's item.

In describing the work of the committee, Chairman McAteer states shipments of printing specimens have been received from all sections of America and Europe. Over 3000 letters have been written in gathering the material for the exhibit. Over 9000 different specimens have been received from which to choose in order to show approximately 4300 examples of the best work of the entrants. One of the interesting features will be two boards containing 160 prize letterheads produced in this country. These two boards will be shown alongside of two similar ones containing 160 letterheads produced in Europe.

An added feature of the printing exhibit will show a comprehensive collection of early American printing in the Treasure Room of the Boston Public Library, some 300 items, which are said to be worth over half a million dollars.

EDUCATIONAL PROGRAM

Aside from the formal portion which is devoted to International Association affairs, the program will hear speakers on the business side of the printing industry. While a goodly portion of the program is set aside for technical discussion, the business and plant management speakers will no doubt convey to practical production and mechanical executives some of the problems associated with the business side of printing plant operation. As a result, many things will be brought to the attention of the plant executive which will give him greater appreciation that the problems of business and production are of equal importance and that each branch of the business should be understood by each type of executive for the success of the business.

ENTERTAINMENT PROGRAM

The entertainment program, because of Boston's natural advantages, is of high order. That the Convention Committee has taken full advantage of the facilities afforded, is best evidenced by a look at the program

published in this issue of *Printing* EQUIPMENT *Engineer*. While full details had not been announced, General Chairman McAteer states worthwhile plans for the continuous entertainment of visiting women-folk have been progressing and that Boston will provide many features which will be pleasantly remembered for a long time to come, not forgetting a very beautiful souvenir of their visit to Boston.

SUNDAY, AUGUST 14TH

3.00 p.m. Celebration of the 300th Anniversary of The Stephen Daye Press. This event will be held on the banks of the Charles River, ten minutes' walk from the Hotel Statler. It will be staged in the Boston Symphony Orchestra outdoor music shell. The music will be furnished by the prize-winning band of the American Legion connected with the Weymouth Post, one of the country's most colorful musical organizations.

The speakers will be the Honorable Charles F. Hurley, Governor of the Commonwealth of Massachusetts, Augustus E. Geigengack, Public Printer of the United States and our International President, Clark R. Long. One thousand seats will be set out on the grass for the use of all visiting delegates. On a good Sunday afternoon we will have an audience of fifteen to twenty thousand because the event will be thrown open to the public. In case of rain it will be held in the ballroom of the Hotel Statler.

5.30 p.m. A reunion will be held of all those who were in attendance at the International Convention held in Boston in 1922. No others will be allowed to attend this affair. It will be held in the Boston Yacht Club, the second oldest yacht club in America.

8.00 p.m. The opening session of the Convention will be held followed by a high-class concert. This event will be held in the ballroom of the Hotel Statler.

MONDAY, AUGUST 15TH

9.00 a.m. Opening session of the Convention followed by the Clinics. The speaker at this session will be Watson M. Gordon, Doremus & Company, New York and Boston and his subject will be "Do You Want to Stay in the Printing Industry?"

11:00 a.m. Clinics.

2.30 p.m. Boat Sail.

There will be a display by the fire boats in Boston Harbor after which the steamship "Town of Hull" will proceed along the coast line to Marblehead where the delegates will see a most picturesque sight, the harbor with hundreds of yachts assembled for a regatta. Sailing across Massachusetts Bay the boat will dock at 6.00 p.m. at Nantasket Beach and a shore dinner will be served including everything from clam chowder and clams to lobster. A moonlight sail will then be taken and dancing will be enjoyed on the boat.

TUESDAY, AUGUST 16TH

9.00 a.m. Business Session.

Speaker: John R. Firth, Associated Newspapers, Ltd., London, England.

11.00 a.m. Clinics.

12.30 p.m. Golf with plenty of prizes for those who want to enter the Craftsmen's Tournament which will be held at the Commonwealth Country Club.

2.30 p.m. The entire Convention will be taken to see the fine plants of Ginn & Company and the Christian Science Publishing Society.

7.00 p.m. Banquet, stage show, and dance to be held in the air-conditioned ballroom of the Hotel Statler. This will be the outstanding entertainment feature of the Convention. The ballroom has a magnificent stage and an exceptional show will be provided for the entertainment of the delegates.

WEDNESDAY, AUGUST 17TH

11.00 a.m. Final business session of the Convention.

CLINICS

MONDAY, AUGUST 15, 1938—11:00 A. M.

"Choice of Type and Layout"
Chairman—Thatcher Nelson, *Service Manager*, Oxford Print, Boston.
Speakers—Milton B. Glick, *Designer*, Viking Press, New York.
Subject: "In the Hell Box"
Leslie B. Sprunger, Clement & Co., Buffalo.
Subject:
Third speaker to be announced later.

BOSTON INTERNATIONAL CRAFTSMEN'S CONVENTION COMMITTEE

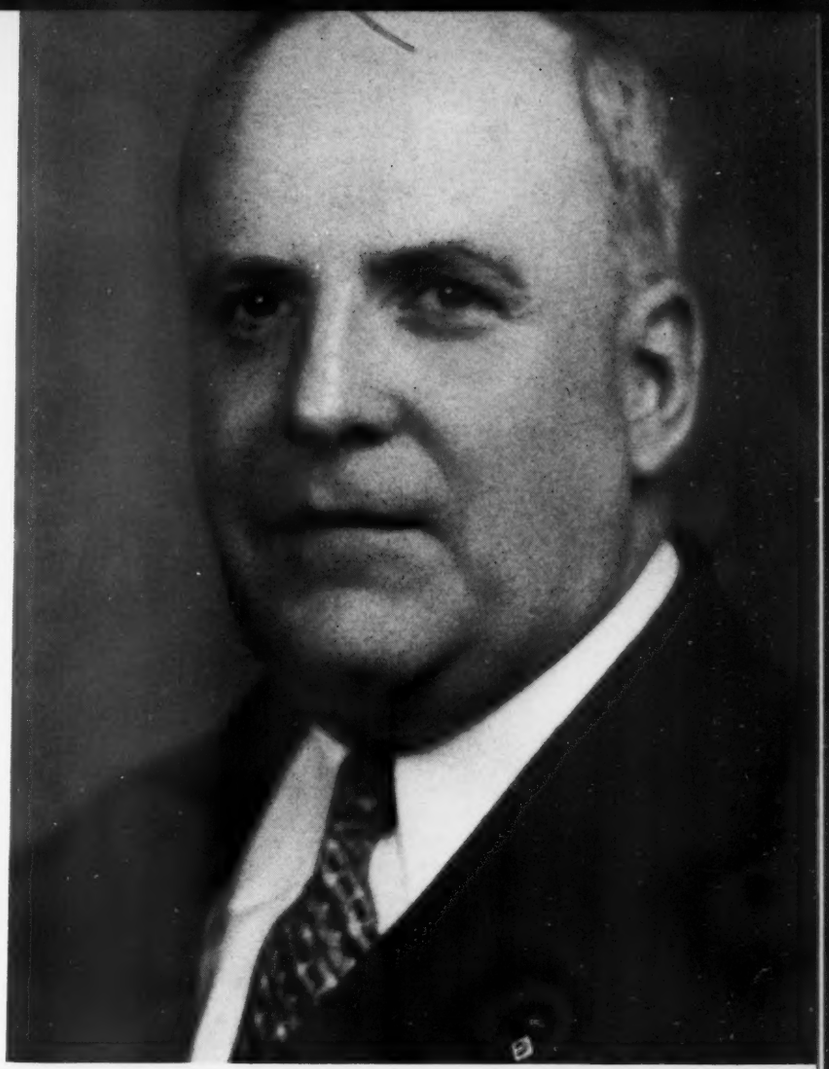
Front Row (left to right): Elmer Lipsett, Fred Williams, William Finnegan, John B. Curry Past International President, Mayor Maurice Tobin of Boston, Phillip J. McAteer, General Convention Chairman and President of Boston Craftsmen's Club, Herbert Stephens, Joseph Donovan.

Second row (left to right): Clovis Williams, Maurice Healy, Joseph F. Holmes, Joseph W. Kearney, Walter Marder, Paul Crudden, Fred Rapa.

Third row (left to right): Carlton Strong, Russell Grush, Robert Elliott, C. J. Paradise, Charles Bowker, George F. Trenholm, Frank Garrity, George Stanbridge.

Fourth row (left to right): Henry Harris, Patrick J. Smith, Howard W. Wallingford, Arthur V. Howland, Francis Duggan, John R. Donohue, Walter Wakefield.

Fifth District Choice for International President



John M. Callahan's career in the International Association of Printing House Craftsmen in an executive capacity has been steady and consistent. His background of service to the Cincinnati Club over a twenty-year period, likewise has been long and useful.

He was elected First International Vice-President at Minneapolis in 1936, being advanced from the Third Vice Presidency to which he had been elected in 1935.

He is a three-time President of the Cincinnati Club of Printing House Craftsmen; was chairman 1927 Cincinnati State Conference; served as chairman of the 1935 Cincinnati International Convention. Craftsman Callahan is Director of Purchases for Divisions of the United States Printing & Litho Company with main plant in Norwood Sta., Cincinnati and other plants in St. Charles, Ill.; Baltimore, Brooklyn and Erie, Pa.

He is credited with having organized three Craftsmen's Clubs in 1938: Atlanta, Ga., Nashville, Tenn., and Springfield, Ill.

Besides his affiliation with the Craftsmen's movement, he is identified with Cincinnati Association of Purchasing Agents, A.S.M.E. Graphic Arts Research Bureau, Elks, Eagles, American Legion, Knights of Columbus, Catholic Order of Foresters, Association Irish Organizations and Irish Fellowship Club. He is married and has one son, John M., Jr.

In 1934, John Callahan received Colonel's Commission from Governor Ruby Laffoon of Kentucky.

"Book Making"
Chairman—Paul A. Bennett, *in charge of typographic layout*, Mergenthaler Linotype Co., Brooklyn, N. Y.
Speakers—Bertram Wolff, *President*, H. Wolff Book Mfg. Co., Inc., N. Y
Subject: "Book Making from the Viewpoint of the Binder."
Richard W. Ellis, *Designer and "Literary Printer,"* Haddon Craftsmen, Camden, N. J.
Subject: "Planning and Printing of Special Editions."
Elbridge W. Palmer, *President*, Kingsport Press, Inc., Kingsport, Tenn.
Subject: "The Trend in Bookmaking Technique."

"New Developments"
Chairman—Roy Kirby, *Manager*, Machinery Sales Department, American Type Founders Corp., Elizabeth, N. J.
Speakers—Alfred M. Geis, *Manager*, Alco Gravure, Baltimore, Md.
Subject: "Gravure and How It Is Produced."
Harvey Glover, Sweeney Lithograph Co., Belleville, New Jersey.
Subject: "Offset."
Subject: "Letterpress." Speaker to be announced later.

TUESDAY, AUGUST 16, 1938—11:00 A. M.

"Selling"
Chairman—Henry Davis, *Sales Manager*, Daniels Printing Co., Boston.
Speakers—Joseph Guiney, *Asst. to Managing Director*, Chilton Co., Printing Division, New York and Philadelphia.
Subject: "How Craftsmen Can Aid the Salesman."
Lawrence Wright, *Sales Production Manager*, Bird & Son, East Walpole, Mass.
Subject: "Selling Printing from the Buyer's Viewpoint."
Third speaker to be announced later.

"Printing Plant Management"
Chairman—Hamilton B. Wood, *President*, Commonwealth Press, Worcester.
Speakers—J. W. Rockefeller, Jr., *Consulting Engineer*, New York.
Subject: "Planned Developments vs. Unregulated Expansion in the Printing Industry."
Robert S. Peare, *Manager*, Maqua Co., Schenectady, N. Y.
Subject: "Management—Open Mouthed or Open Minded."
George K. Hebb, *President*, Evans-Winter-Hebb, Inc., Detroit.
Subj.ct: To be announced later.

"Color"
Chairman—George S. Marsh, *Artist*, Alcott, Thoner and Marsh, Boston
Speakers—John McMaster, *Graphic Arts Department*, Eastman Kodak Co., Rochester, New York.
Subject: "Kodachrome and Color Printing."
Prof. Arthur C. Hardy, *Dept. of Physics*, Mass. Institute of Technology, Cambridge, Mass.
Subject: "Color Reproduction."
Arthur S. Allen, *President*, Allcolor Co., New York.
Subject: To be announced later.

Early American Printing Exhibit In Boston Public Library

An exhibit of early American printing will be on display in the Treasure Room of the Boston Public Library—three minutes' walk from the Convention headquarters, Hotel Statler. Dr. Zoltan Haraszti, who has cooperated with the Boston Craftsmen's convention committee has prepared a discussion about the exhibit which is reproduced below:

"In honor of the Annual Convention of the International Association of Printing House Craftsmen, the Boston Public Library will arrange a comprehensive exhibition of early American printing in its Treasure Room. All the show cases will be filled with rare items of Americana; in all, some 300 items will be placed on view.

"In the library collected by Thomas Prince, pastor of the Old South Church from 1718 to 1758, the Boston Public Library possesses one of the greatest collections of books relating to America or printed in America. It is from the Prince library that the larger number of the volumes in the exhibition will be chosen.

"Two copies of the Bay Psalm Book, the first book printed in what is today the United States of America, will be on display. Only ten copies of the work exist, and about half of these are incomplete or imperfect; the copies in the Boston Public Library are among the finest.

(*Continued on Page 68*)

Equipment Modernization at Milwaukee *Journal*

Two years ago, an equipment modernization program was started in the Milwaukee Journal *mechanical departments. Since that time, eleven new Intertype ad machines have been installed in the Composing Room. Nine of these are eight-magazine machines (four main and four side magazines), all eleven machines being equipped with quadders and saws. In the Stereotype Department, two direct pressure molding machines and complete color plate-making equipment for comics, etc., have been installed. In the Pressroom are being installed at the present time two six-unit, high-speed Hoe presses with complete color arrangements. These are in addition to the high-speed Hoe color press which went into operation in the* Journal *plant last August.*

Layout

Of Milwaukee *Journal* composing room and direct methods used do not permit lost production motion

By STAFF WRITER

THE Milwaukee *Journal*, established fifty-six years ago, has maintained the highest standards in keeping its mechanical departments equipped with modern machines and progressive methods. The result of this policy has brought recognition as one of the finest printed newspapers in the United States. In 1924 the *Journal* moved into its new building—the realization of everything possible at that time in modern arrangement and comfort for those who had brought the success that made this progressive step possible. In the recently undertaken modernization program, speed and production efficiency are the key factors. This story deals principally with the production methods and equipment layout in the composing room. Modernization and methods in the other mechanical departments especially the new pressroom equipment, will make a story in themselves and are reserved for another time.

Composing Room

The *Journal* composing room is on the top floor of the five-story building which gives access to all possible daylight and fresh air. There are no posts in the room. Floor space shows careful planning in utilizing every square foot of space. The result of this planning gives each production unit compact arrangement, with comfortable working areas. The units are so placed that all advertising, editorial and news copy flows in straight-line production to the makeup tables and to the stereotype department (which is on the same floor), in smooth, well directed routine.

The Dispatch Room

The Dispatch Room which is said to be one of the first if not the first in any newspaper plant, is directly in front of the elevators, immediately adjacent to the main entrance to the composing room. Across the hallway are the offices of the Production Manager, the Mechanical Superintendent, the Engraving department, and the Art department.

The Dispatch Room is the clearing house for all advertising copy, proofs, cuts, mats, artwork, engravings, and materials for advertising makeup. Here this material is assembled, recorded, and routed to the proper production channels.

Advertising copy is stamped for schedule of running dates, and the dates proofs are to be ready. Outgoing and incoming proofs are recorded per schedules.

Layout of advertising is prepared in this busy room—locations of all ads being indicated in a record book in agreement with contracts and insertion orders.

Copy for all Classified Advertising and the scheduling of outgoing and incoming proofs are directed from this point.

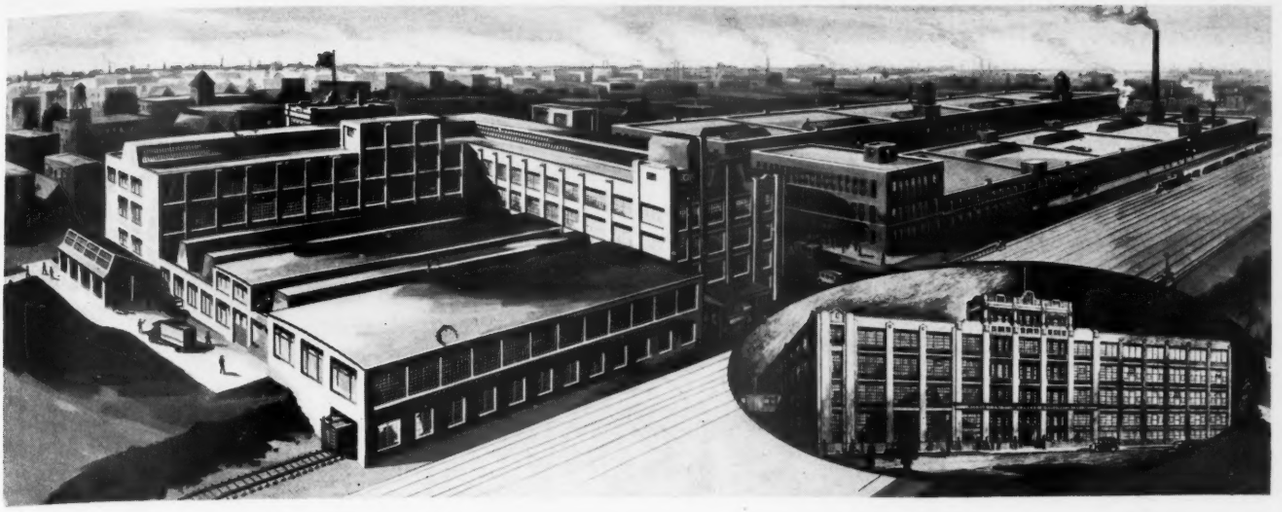
Advertising Makeup

When cleared by the Dispatch Room, all advertising copy and material is routed to the ad foreman's desk, where it is given a key letter which identifies it throughout entire production. Assigned to the copy desk, copy is marked for machine and hand work.

(*Continued on Page 28*)

Upper Left:
View in ad alley of the Milwaukee Journal *composing room. As part of its modernization program, the* Journal *has installed eleven Intertypes, all equipped with quadders and saws. All of the hand display composition is done in the alley between the cabinets. Assembling is done outside the alley. See diagram showing arrangement of equipment. There is no scarcity of spacing material in this ad alley. Saws and mitreing machines for use by the ad hand men are located opposite each of the two rows of cabinets.*

Lower Left:
View in makeup section of Milwaukee Journal *composing room. Two direct pressure machines cold-mold the mats for the daily editions as well as the color pages which are hot-molded for exact color registration of the plates.*



Printing Presses

How they are developed by a long established concern for the printing and publishing plant and a peek into the Miehle factory itself

By B. D. STEVENS*

HAVE you, as a production or mechanical executive wondered how a printing press manufacturer keeps his products in tune with the times? You know full well that in your own business of supervising printing plant production there is nothing so constant as change—you must fit your administrative methods to changing conditions. Obsolescence in printing plant supervision and equipment obsolescence go hand in hand. So far as you are concerned, you are aware of the effect of backward business and production methods—the other fellow gets the order. Well, it's just like that with the printing equipment manufacturer. He is constantly keeping himself in touch with the general trends and requirements of the printing industry. The idea is, being made aware of these changing conditions, be develops improved machines and processes to meet the requirements. Also, the progressive equipment manufacturer furnishes information and data to printers to help them in solving their printing problems which arise because of changing economic conditions.

Now, most printing plant executives are not aware of the heavy expenditure in time and money invested in the development of that wonderful new press just installed in your pressroom. To be sure, you are pleased with its coin-new appearance and its stepped-up production.

To keep in constant contact with the ever-changing requirements of the printing industry, the Miehle Printing Press & Mfg. Co. maintains in its Engineering Division a staff whose duty it is to study carefully the requirements of the industry. The duties involve much traveling and other investigational expense. Frankly, most of the ideas for new machines and improvements to existing machines are not the brain children of the Engineering Department. They come from suggestions received from printing plant business, production and mechanical executives, from pressmen and from our traveling representatives and outside service men.

When these ideas are received by us, they are investigated to see whether they can be applied so as to improve the operation of the presses we build. No idea,

*First Vice President in Charge of Engineering, Miehle Printing Press and Manufacturing Company, Chicago.

Interesting Miehle Personnel Notes

Miehle employees are insured under a Group Insurance Plan in case of death. Payment of insurance before death in case of total disability is permitted. Total cost of this insurance is paid by the company with no cost, whatsoever, to the employees.

Miehle Employees Benevolent Society pays a sick benefit and a small death benefit in case of employee or wife. Members of the Society also have an annual picnic and dance.

The Athletic Committe conducts a bowling league and other sports.

Twenty-six foremen, with service records from two to forty-eight years, have an average employment record of twenty-nine years. All foremen come up through the ranks.

Shop employees with a year or more of service receive one week's vacation with pay.

An interesting commentary on Miehle personnel relations is expressed in this table:

Factory employees 5 to 10 years of service	194
Factory employees 10 to 15 years of service	233
Factory employees 15 to 20 years of service	132
Factory employees 20 to 30 years of service	147
Factory employees over 30 years of service	91

1—This picture is representative of the extreme care which is taken in the manufacture of every part going into Miehle printing presses. The operator is grinding a cylinder for a Miehle Horizontal press and has stopped work to check the cylinder dimension with a 12 in. micrometer. A tolerance of half a thousandth of an inch is allowed in the diameter although no taper whatsoever is permitted.

2—The Vertical Machine Department was designed especially to manufacture the main parts of the Miehle Vertical and Horizontal. It is highly developed as a production department due to the unusually large amount of special tools and equipment.

3—In the Drafting Department shown here, all presses are designed on paper tracing cloth or other suitable material. Exact dimensions and tolerances are as specified by the Engineering Department.

4—It is the function of the Grinding Department to finish off parts to very accurate dimensions. It is common practice to work within limits of one or two thousandths of an inch—in some cases as little as three tenths of one thousandth of an inch (0.0003 in.) The type bed bearers which this operator is grinding is an example.

irrespective of its importance or its source, is overlooked—all are investigated thoroughly.

In the course of the development of an idea which may involve a proposed new machine or process, the development generally passes through four different stages, as follows:

(1) Investigational stage
(2) Experimental stage
(3) Designing guided by results of experimentation
(4) Final testing stage

As is noted above, the first stage is that of investigation from the standpoint of utility, practicability and economy.

If it is found advisable to proceed further, it passes into the experimental stage where it is gotten into shape for a general design.

Designing, the third step, naturally follows. Design operations are guided by the results obtained in the second or experimental step. Where the development concerns a new machine, the design is put into metal and built, after which it is tested, so far as testing is possible in a manufacturing plant. Corrections in design are made according to the results obtained from the testing period.

The final testing stage consists of putting the machine into practical operation in a printing plant. Here it is operated under actual production conditions upon a large variety of work. When the shortcomings (if any) have been remedied, the machine is ready to be offered to the trade.

As the result of this method of handling suggestions, several new ideas have been incorporated in the design of our printing presses, giving higher printing speeds, better register and smoother running conditions. These results have been accomplished largely by the development of new theories related to the design of cams and gearing.

In the case of gearing, new development has made it possible to produce, literally, a cam with teeth by which any desired motion may be imparted to the follower through the whole 360 deg. while it is under positive control. The application of this principle resulted in better means for combining in one machanism a sheet straightener, slow-down and feeding-in device,

5—This view illustrates a section of the Main Erecting and Testing Floor in the plant of the Miehle Printing Press and Manufacturing Company. The department has a capacity of forty flat-bed presses at one time. Here are also erected and tested Miehle Offset and Rotogravure Presses. This floor is equipped with modern facilities for heating and lighting. The hoisting machinery which is used for lifting, positioning and transporting heavy press parts is designed to serve the entire floor area.

6—This is a view of the Miehle Horizontal Press erecting line. Notice that the press in the foreground doesn t look very much like a printing press. Certain additional parts have been added to the second press in the line, and as each machine moves along it is built up progressively so that it emerges as a complete press by the time it comes off the end of the line. At each station in the line, each man applies certain parts because he is a specialist in applying that particular part of the press.

7—The Miehle Vertical Printing Press is built on an assembly line, similarly to that used in automobile production. After each man has completed his task of applying certain parts, the press is moved to the man at the next station. This procedure continues through to the testing and final inspecting stations.

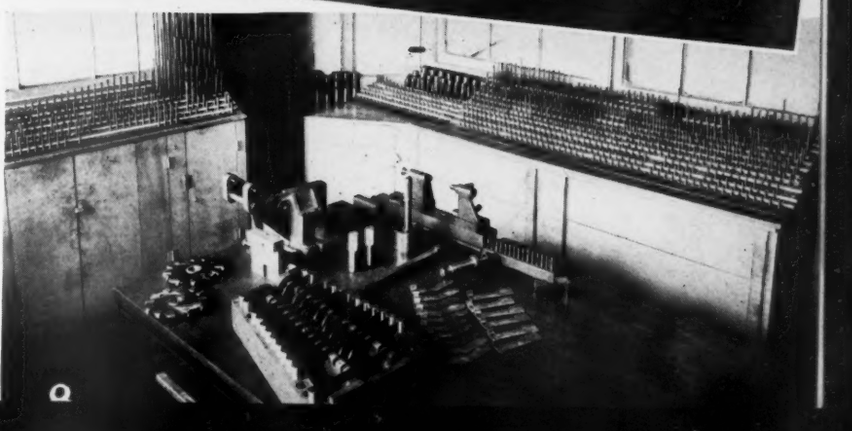
8—This illustration shows a corner of the Gauge Control Room in the factory of the Miehle Printing Press & Mfg. Co. Nothing in the way of dimension of Gauges or Press Parts is taken for granted in this factory. Shown also are some of the Master Stick Gauges which are used only to check Service Gauges in daily use. Throughout the factory many hundreds of gauges are in daily use. A very slight wear or accidental damage to one of the gauges would result in much spoiled work. This room might also be called the "Watch Dog Department."

for sheet feeders. Another application produced curved register racks for flat-bed presses, resulting in a more nearly correct timing and insuring better register.

On our offset printing presses, research has produced new theories regarding the relationship between the pitch diameters of two printing elements under conditions of pressure, to produce true rolling contact where one of the printing elements is composed of a rubber blanket and the other a metal surface.

It is the task of the Engineering Department to continue improving the company's products even after they are considered ready for sale. The Miehle flat-bed press which was considered a mighty good machine thrity years ago, has been improved constantly always with the idea of making it do better printing at higher speeds, more convenient to operate and wear longer.

The growth of the company's business and the fact that over eighty percent of its total business at present is for machines which were not on the market twenty years ago, is illustrative of constructive and progressive engineering.



The Miehle Factory

The Miehle factory covers 14½ acres of floor space and consists of four buildings. The power consumption is 1200 k.w. average, coal 600 tons per month average. There are 816 hourly paid men and 210 weekly paid men employed (not including main office) supervised by 29 foremen, various executives and superintendents. Including all employees throughout the country, 1184 persons are members of the Miehle organization.

The factory is a well equipped machine shop for its class of manufacturing, using modern machinery and methods for accurate and economical production. There are approximately 1000 machine tools in the factory. The equipment of jigs, fixtures and gauges is unusually complete for machinery of this size. This has often caused comment from visitors.

(*Continued on Page 42*)

Improving Your Lighting With Paint

By JAMES A. MEACHAM*

FEW plant operators realize the important part played by paint in improving lighting values, particularly where lighting units of the indirect type are used. Inasmuch as practically all the light from this type of fixture is directed first to the ceiling and thence reflected on the working plane below, it is obvious that a ceiling surface of low reflective power actually wasts a substantial amount of the illumination produced. Take a look at your walls and ceilings. Are they dark, either in color, or by reason of the accumulation of soot and dust? Soot, fumes and other discoloring accumulations all tend to reduce the reflective value of any paint color. Even white paint that has become badly soiled may lose as much as 50% of its original reflection value.

Obviously, abundance of light alone is not the only factor to consider in the problem of ideal illumination. We are all familiar with the blinding glare which results from an excessively bright light against a dark background. The modern indirect lighting unit which distributes light uniformly without glare represents one of the outstanding improvements of this age. Modern developments in paints of high light reflection value and great diffusing power go hand in hand with improved forms of lighting equipment.

Where the accumulation of dust and dirt is apt to be excessively rapid, the use of a Gloss White Paint may be advisable. Where chemicals, heat or other adverse conditions exist, paint of fume resisting quality is the logical solution. Fume and moisture problems, particularly if severe, are best taken care of by calling in a trained painting engineer, to cooperate with the lighting engineer. Gloss paints are more readily cleaned than eg-shel or flat finishes but, unless the conditions actually require their use, they are not generally recommended for printing plants because they produce a specular or mirror-like reflection with consequent tendency toward glare.

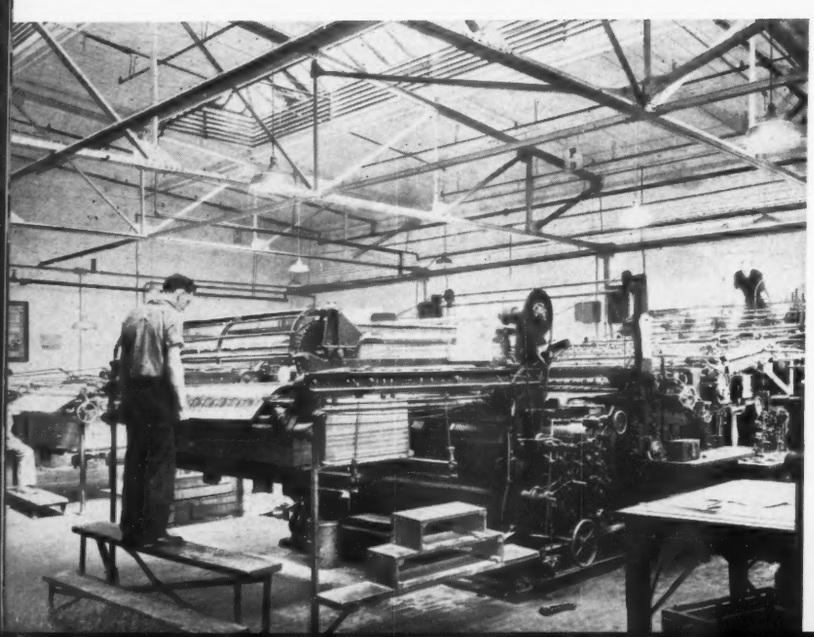
Eg-Shel White has good resistance to soiling and at the same time produces a softer and more even diffusion of light. Possibly, the ideal finish from the standpoint of light reflection is Flat-White. It produces a more uniform and diffuse type of reflection than any other paint due to its higher pigment consentration. For surfaces subject to appreciable soiling and which must be frequently washed, however, Flat paints are not practicable. Printing plant operators will find the egg-shell type of finish a good, general-purpose material which combines high light reflection characteristics with serviceability.

Lower walls or wainscots may be finished with dado enamels in color shades to suit the taste. Consideration should be given, however, to the psychological reaction to various colors. Red has been found to induce temporary stimulation, followed by nervous tension and fatigue. It is too exciting for long exposure and on large areas. Blue is a cool color inducive of calm, but if used too freely sometimes arouses a feeling of chill even where temperatures are adequate for comfort. A light warm fray, buff or green usually find favor. Gray is neutral. Buff or brown are mildly stimulating. Green and yellow, in many persons, increase vitality and amiability. Where white dominates the color scheme for the purpose of assuring a maximum of good light, light green has been found by many to serve as an effective "relaxing agent."

Good plant layout, modern and efficient equipment and ideal housekeeping standards are important factors in the success of a printing plant. The part paint plays in achieving a bright, clean, wholesome atmosphere and ideal seeing conditions has long been recognized by time and motion study engineers. A remarkable example of the part paint plays in improving illumination, and where careful before and after readings were made and plotted by engineers, will be found in the American Stove Works plant in Lorain, Ohio. The improvements recorded in this plant will apply just as much to a printing plant. The buildings represent a

(*Continued on Page 70*)

*Consulting Engineer, The Sherwin-Williams Company, Cleveland, Ohio.



UPPER LEFT:

Beck Engraving Company, Philadelphia, maintains model lighting and seeing conditions throughout the plant. Reflected light in a department like this is of great importance to the Craftsman.

LOWER LEFT:

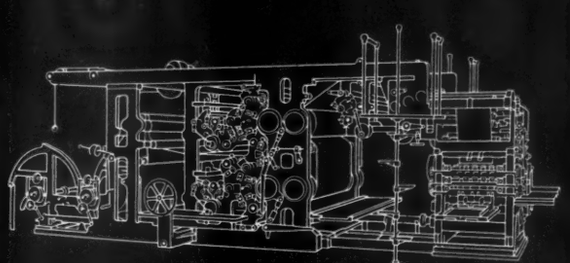
Ample light from the windows and reflected from the white painted walls and ceilings facilitates press operation in every way.

ONE and TWO-COLOR printing as well as PROCESS work

Despite recent advances in color printing, in which Cottrell is proud to have had a leading part, most of the world's production of magazine printing is still done in one or two colors. In this production, as in color printing, Cottrell leadership is based upon the solid foundation of quality. Since this Company does not manufacture newspaper presses, the viewpoint of the entire Cottrell organization is distinctly a magazine and color press viewpoint. As a result, Cottrell speed is always combined with dependably good presswork. Equipped with drying mechanisms for use with modern quick-drying inks, Cottrell magazine presses are built to print and fold quality magazine pages at speeds up to 750 feet of web per minute. Write for detailed information about the latest Cottrell magazine press constructions.

C. B. COTTRELL & SONS CO., WESTERLY, R. I.

NEW YORK: 25 East 26th Street • CHICAGO: 332 South Michigan Avenue
CLAYBOURN DIVISION: 3713 N. Humboldt Ave., MILWAUKEE, WIS.
SMYTH-HORNE, Ltd., 1-3, Baldwins Pl., Gray's Inn Road, LONDON, E. C. 1



Typical Modern Cottrell Magazine Press

COTTRELL

Layout

(*Continued from Page 22*)

Eleven line-composing machines, equipped for ad work, are arranged in direct line with the ad makeup alleys. On the copy cutter's desk there are eleven copy compartments, one for each machine; as the copy is marked it is placed in the proper compartment, from which it is given to operators. As the composition from each machine is completed the type is returned to the copy desk, which is equipped as a dump for the finished work. Complete layout, cuts, and type are then routed to the ad makeup banks.

The arrangement of the makeup department is said to be ideal by many competent visiting executives—the cabinets are so placed that the type cases face the inside, the makeup banks facing the outside; this eliminates

DIAGRAMMATICAL EQUIPMENT LAYOUT IN MILWAUKEE *JOURNAL* COMPOSING ROOM

The Milwaukee *Journal* composing room floor area just about conforms to what composing room experts would consider ideally proportioned. It is nearly square—approximately 82 ft. by 88 ft. The room is on the top (fifth) floor of the *Journal* building. Natural daylight is admitted through the roof. Notice that the non-productive departments are located along the north boundary of the composing room proper. This arrangement permits compact placing of production units without break in the work flow.

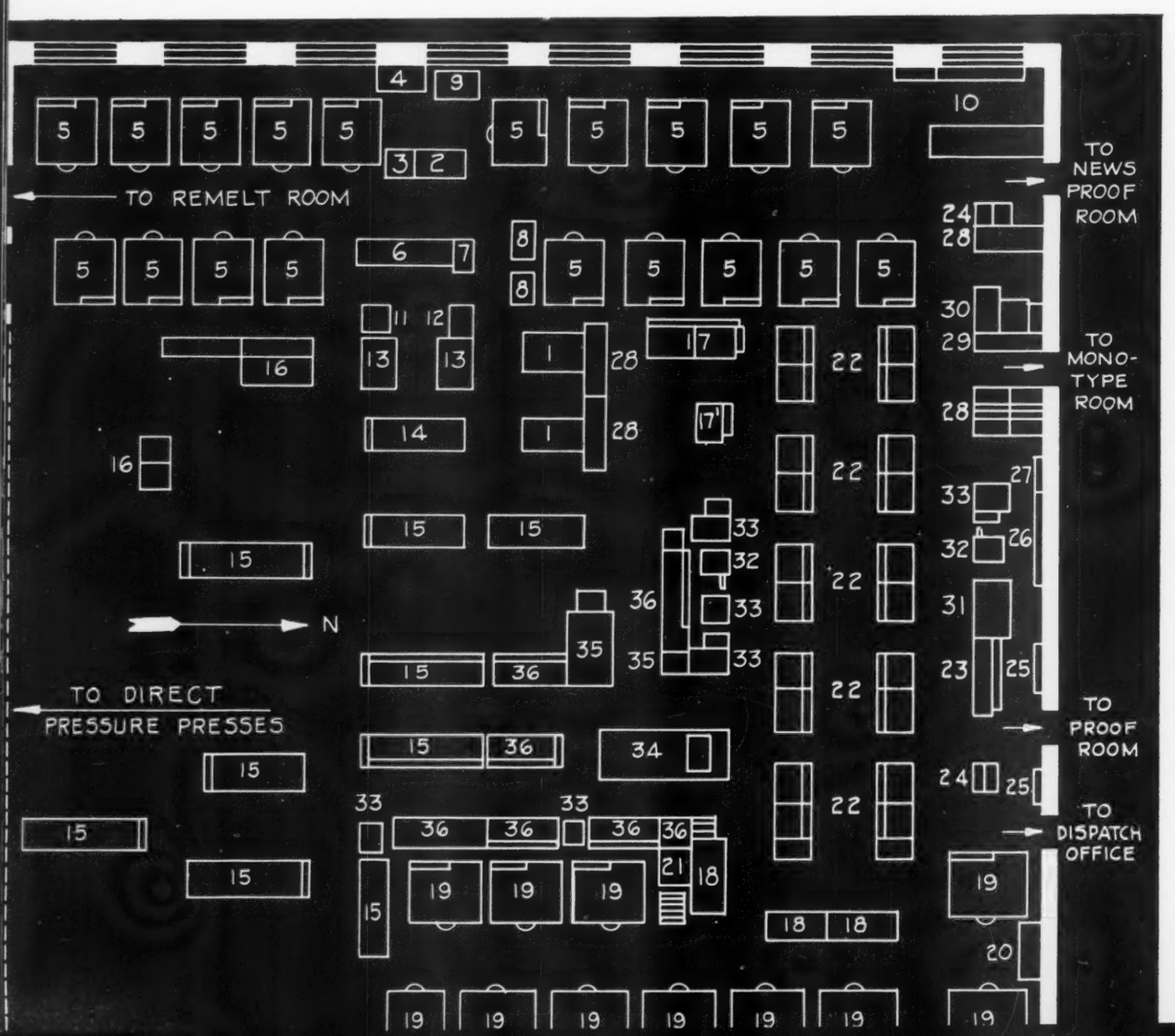
The editorial-news and the ad line-composing machines are separated so that the two operations do not overlap in any way. In other words, editorial-news and ad composition are two distinctly different manufacturing operations and are treated as such in this composing room.

The news and ad proof rooms are separated—the functions of each do not overlap and cause confusion as would be the case if the two departments were combined.

The Monotype room is placed adjacent the ad room. Type and material storage is centralized so that case replenishment may be accomplished without interference.

The layout of the ad room makeup (assembling) banks is interesting. Display composition from the type cases is done inside the alley between the two rows of banks, while the purely assembling operations are performed outside the type-setting alley. Saws and mitreing machines face each row of makeup or assembling banks.

1—Foreman's desks.
2—Copy cutter
3—Copy tubes
4—Copy elevator
5—Editorial composing machines
6—News dump
7—Tube-O-Type for head composition
8—Tube-O-Type Refill Cabinets
9—Credit lines
10—Machinist department
11—Editorial saw
12—Table
13—Proof presses
14—Correction bank
15—Makeup banks
15—Makeup and galley storage
16—Classified and markets
17—Rotogravure makeup and type cabinet
17—Roto proof press
18—Ad copy desk
18—Ad copy desk and ad dump
19—Intertype display machines
20—Magazine racks
21—Machinist's bench
22—Ad makeup banks
23—Rule storage cabinet
24—Type
25—Rule storage
26—Monotype storage
27—Monotype storage
28—Type cabinets
29—Space and quad cabinets
30—Border and rule storage
31—Saw
32—Mitreing machines
33—Saws
34—Power proof press
35—Proof presses
36—Ad storage banks

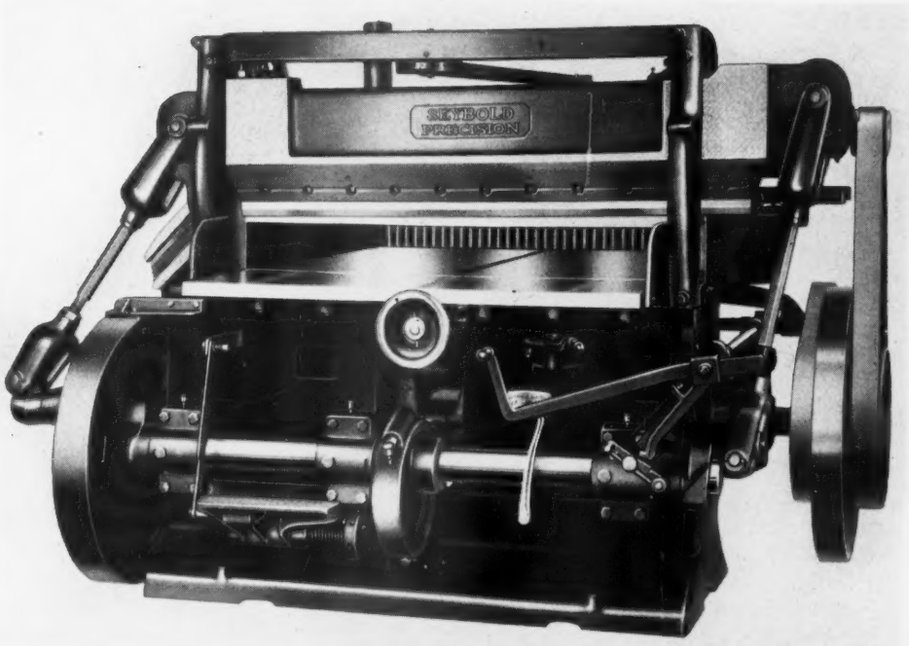


SEYBOLD

PIONEER BUILDERS OF SUCCESSFUL CUTTING EQUIPMENT . . . . . .

SALES AND SERVICE DEPARTMENTS

- New York: E. P. Lawson Co., Inc. 426-438 W. 33rd St.
- Chicago: Chas. N. Stevens Co., Inc. 110-116 W. Harrison St.
- Atlanta: J. H. Schroeter & Bro., Inc.
- San Francisco, Los Angeles, Seattle: Harry W. Brintnall Co.
- Dayton: Seybold Factory
- Toronto, Montreal: Harris-Seybold-Potter (Canada) Limited
- London, England: Smyth-Horne, Ltd.
- Latin America & West Indies: National Paper and Type Co., Inc.



SEYBOLD *Precision*

PAPER CUTTING MACHINES have been the Standard of Industry for Fifty Years

Other Products by Seybold . . .

- Book Compressors
- Book Trimmers
- Cutting Machines
- Drilling Machines
- Knife Grinders
- Die Presses
- Round Corner Cutters
- Stamping Presses
- Wire Stitchers

The new SEYBOLD PRECISION AUTOMATIC CLAMP PAPER CUTTERS have been perfected to keep pace with all modern requirements of the printing industry. In the cutting requirements of plants, large and small, Seybold Cutters have distinguished themselves as the real profit makers in the field.

SEYBOLD CUTTERS assure precision accuracy, speed, and safety, with increased production and low cost operation.

SEYBOLD DIVISION • HARRIS • SEYBOLD • POTTER COMPANY
D A Y T O N • O H I O

interference and lost time in keeping all working space clear for ad assembling and composition operations.

Type faces in constant use are available in duplicate series, which allows each compositor an individual working unit. A complete storage system of sorts takes care of replenishing the display cases, as they are depleted. A completely equipped Monotype type-casting room supplies a constant flow of type and strip material.

Directly back of each series of ad makeup banks is a line of saws and mitering machines, alternated so that one of each machine gives the men a complete working unit.

When completed, the ads are proofed for reading, corrected, stored and proofs filed. The storage cabinets are arranged so that each ad is classified for day and date of publication.

The ad proof room is directly in front of the makeup department, fully enclosed, practically noise-proof, and is equipped for comfort, and facility in reading.

The ad department is equipped with a large power proof press capable of turning out reprints of page ads, as well as taking care of the regular proofing. Smaller presses are available for regular run-of-mill ads.

Editorial and News

Editorial and news copy comes to the copy desk in the composing room through a pneumatic tube system, direct from the Editorial Department. All copy is keyed for classification, the key letter being reproduced on a slug which is placed above the take, the proof carries this key until matter is assembled for makeup.

Copy takes are assigned the machine operators from the copy desk placed directly in the center of the battery of machines. The galleys of type are routed to the proofing bank, corrected and stored according to date and classification.

The news proof room is equipped with a large, specially designed reading table—each reader has ample room for handling all classification of copy, without interference from other readers and copy holders.

Page Makeup

Complete paged dummy for each edition is prepared by the editorial department for final makeup. Text matter is grouped according to the edition in which it is to appear—Star (Home), Home, Market, and Predated.

These editions are assembled, and made up on large portable steel top tables, (trucks), they are then taken to the direct pressure matrix presses. As the pages are madeup and taken to these presses they are checked out of composing room. As they are molded they are cross checked according to press forms—eliminating all chance for any one page to be omitted.

Between the routine of daily edition work, schedules are carried out, making up market pages, comic sections, and features for the Sunday edition and the Sunday magazine sections.

SYMBOL	MEANING
L	Local News
T	Telegraphic News
B	State News, for State Editions Only
BB	State News, all editions
E	Editorial
EF	Editorial Page Features
M	Markets
W	Woman's
S	Sports
SA	Sports Bulldog
P	Page 1—Section 1
H	Page 1—Section 2
K	Fiction

(Where more than one continued story is running, prefix the first letter of the story's title to the symbol. Egs., for "Resurrection Rock," the symbol would be RK.)

C	Special Features
MD	Music and Drama
MDF	Music and Drama Features
U	Society
UF	Society Features
X	Bulldog
G	Green
Y	Peach
Z	Auto

S Following any of the above symbols, Sunday copy of the classification indicated. Egs., LS. Local News, Sunday; XS, Bulldog Sunday.

A Following any of the above symbols, time copy of the classification indicated. Egs., TA, Telegraphic News, time copy; SA. Sports, time copy; etc.

Symbol scheme for classifying and identifying editorial and news copy in Milwaukee Journal *composing room.*

View of section of editorial-news composition section in Milwaukee Journal *Composing room.*

Stereotype Department

The *Journal* takes particular pride in its stereotype equipment, and its equipment arrangement. Two large direct pressure mat presses (hot or cold molding), eliminate all stretch in the mat. All color work is molded hot, which assures a precision-set matrix for the register required.

The stereotype department is well lighted, and ventilated. Cleanliness throughout the entire room gives evidence that the problems of handling tons of metal, dross, and other combative features incidental to producing stereotypes have been overcome.

A thirty-five foot A-Frame, entirely of glass, takes care of the smoke and gases arising from the huge metal pots, and casting boxes. When weather permits large windows may be opened. Ventilation is facilitated by large fans which keep the room clear at all times.

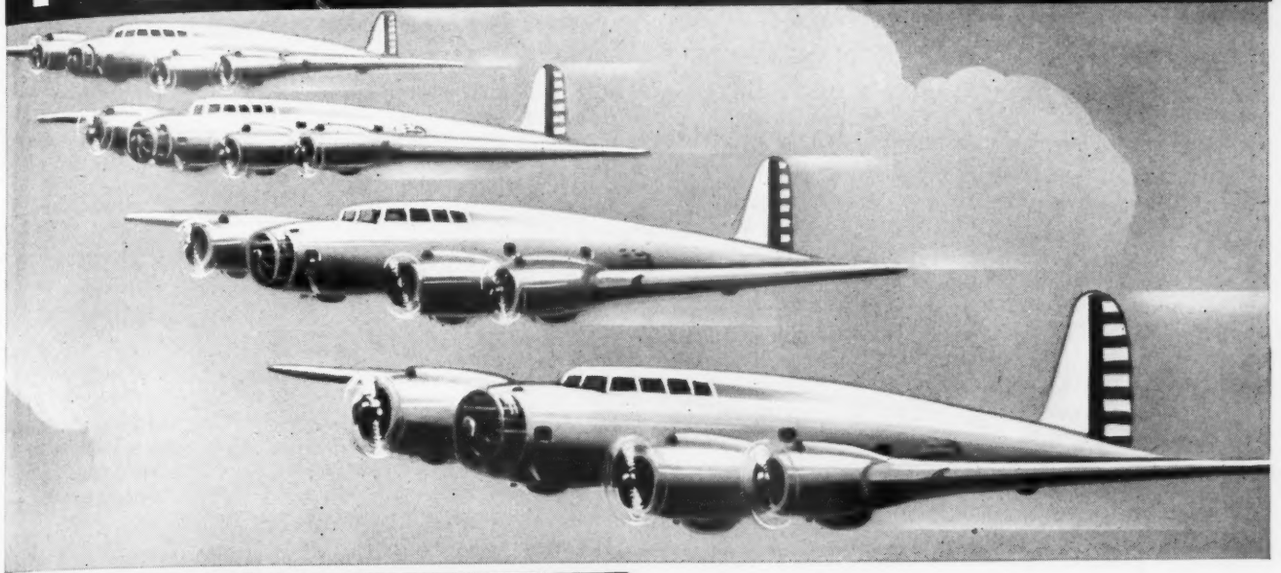
Electric metal pots are used exclusively in melting all stereo and type metals.

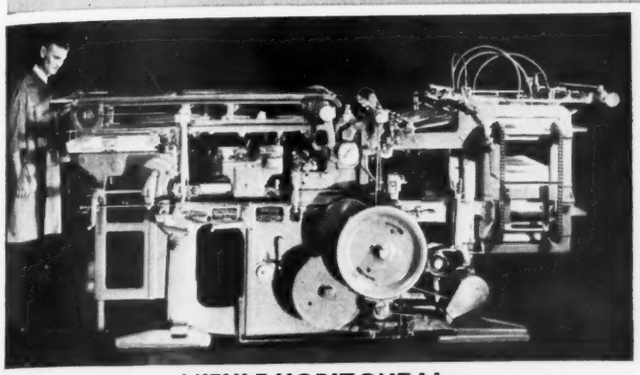
Electric Vacuum Casting Box

The plates made for the small page editions—*Sunday Screen* and *Radio Magazine*, comics and other features, are cast in a modern electric Vacuum Casting Box. The entire machine is electrically operated, from the pouring of the metal to the finished plate.

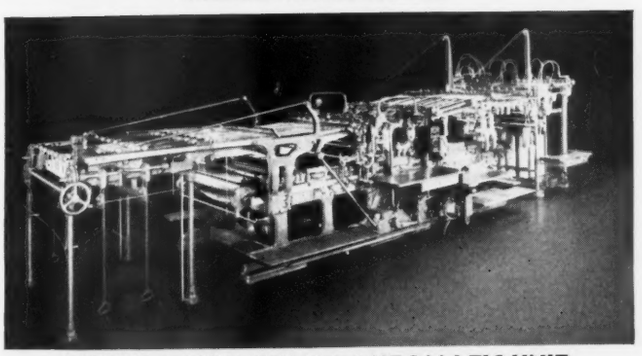
Through a suction device the mat is held to the casting surface with rigid precision while the cast is being made. The casting box is water-cooled. The plates are cast, trimmed and beveled to perfect printing thickness and press specifications.

PERFORMANCE

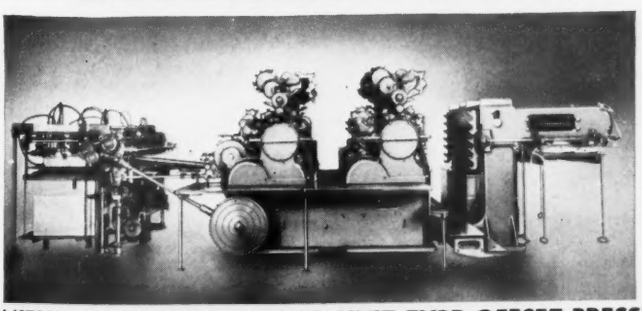




MIEHLE HORIZONTAL



MIEHLE 41 TWO COLOR AUTOMATIC UNIT



MIEHLE NO. 60 TWO COLOR UNIT-TYPE OFFSET PRESS

EVER since the first MIEHLE two-revolution flat bed cylinder press printed its first sheets *performance* has been an important gauge of printing press value. Therefore, MIEHLE turns its best talents to the perfection of this quality.

A MIEHLE gives you exceptional performance with its ease of operation, accuracy, safety, speed and economy . . . each an important part of performance . . . each contributing to your greater satisfaction. MIEHLE performance remains unchallenged.

Motored by KIMBLE

MIEHLE

PRINTING PRESS & MANUFACTURING CO.

CHICAGO NEW YORK

SALES OFFICES IN PRINCIPAL CITIES

IT PAYS TO PRINT IT ON A MIEHLE

Pressure

One of four major elements in letterpress printing—How to test and keep presses in condition to preserve true rolling contact

By STAFF WRITER

THE major elements of printing are pressure, inking, feeding and delivery. The keynote is pressure without slur and in rigister. The two-revolution flat-bed press is designed vertically from the printing surface of the form or in other words is designed up and down from the basic height of type, which is 0.918 in.

The bed bearers on different presses are ground so that the top surface is from 0.918 in. to a few thousandths of an inch less above the surface of the bed. The cylinder bearers are ground correctly to within 0.0005 in. in order that the paper and the form will contact in the unison necessary to avoid slur and wear of the form.

The travel of the paper surface and the form is synchronized during the impression. Accurate construction is required since lack of synchronization in speeds affects the printing contact.

In theory, pressure or contact between form and paper occurs in a succession of lines as the cylinder rotates over the bed but really the contact is a surface varying in width with the pressure needed to lift the ink from the form to the paper. How much pressure may be required depends upon the area of the form, the surface of the paper and the nature of the ink.

The impressional strength of a modern press is designed to withstand a pressure of more than 70 lbs. per longitudinal inch of cylindrical contact with the form.

Pressure Needed to Transfer Ink

Pressure is distortion of materials and minimum pressure approaches an ideal condition never attained—the "kiss" impression. The acid test of time has fixed 0.003 in. as the average thickness of sheet required to supply the pressure needed to transfer the ink from the form to paper. This may be visualized as the caliper of a sheet of 25x38, 60 lb. m.f. book or 17x22, 16 lb. sulphite bond.

Makeready Costs Minimized

In printing plants with a pre-makeready department and a system of checking and conditioning the presses, makeready cost is much less than where presses are out of level and the forms may contain units varying as much as 0.010 in. or even more. All inaccuracies in press and form must be compensated for in makeready or indiscriminate pressure will be required to transfer the ink from form to paper. Generally, there is excess pressure resulting in slurs and premature, excessive wear in the edges of units parallel to the cylinder.

The design of a modern press requires maximum tensile strength of material and accuracy of construction in respect to wide-faced gears, long and ample bearings for shafts and rods, and convenient, thorough oiling facilities.

Of great importance is levelness. Most modern presses are level when the erector turns the job over to the pressman. If flooring and supports are not the best, the press should be tested and leveled as needed.

Press Construction for Rigidity

The bed is supported with from two to six steel-faced tracks, depending on the width of the bed, with numerous friction rollers of the best steel, of ample width and preferably geared throughout their run. As these tracks and rollers are an important link in the chain of parts on which impressional strength depends the tolerance is held within close limits. The tracks are held to 0.0005 in. for thickness and the diameter of the rollers is held within 0.0003 in. If the rollers vary, the bed will not be evenly supported. Even the temperature of the rollers in the finishing operations must be checked lest there be a variance in diameter when the rollers are cool which would prevent each one sharing equally in supporting the bed.

Cylinders should be exceptionally strong with solid webs connecting the shaft with the outside surface and all cast in one piece. The ends should be sections of solid metal with generous journals on each and which turn in boxes on bearings that have been hand scraped to fit to avoid looseness and play. Cylinders generally are held on impression by tool-steel rods and the impression given through eccentrics.

Pressure Associated With Accuracy

Pressure is closely associated with accuracy which must be built into the press from the start. A quotation from Holy Writ syggests itself here: "Faith is the evidence of things hoped for, the substance of things not seen." Or, perhaps in modern vernacular, "There's more in this than meets the eye." In other words, machines are bought largely on confidence or faith in the builder. A good sample of faith in accurate construction was Lindbergh's solo flight across the Atlantic to Paris.

Faith in the accuracy of the press builder is necessary Accuracy must be built into the cylinder, the bed and its supports and must be present in the erection of the press, not forgetting the importance of leveling.

Testing Cylinder and Bed

The modern press builder has gauges and limits of tolerance and any parts out of these limits are discarded. It would be difficult for the average printer to discover weak spots and how much deflection occurs under pressure. So the press builder developed a system for locating weak spots under which deflection of any spot in bed or cylinder under stress may be discovered. Special test blocks placed between cylinder and bed set up a pressure required when printing a heavy form. With a special direct reading micrometer gauge, readings are taken at intervals of 4 in. across the width of the bed and cylinder. A chart is made showing the variations recorded. The observations are continued at different points the long way of the bed until finally the actual condition of the entire bed under printing pressure is obtained. Any spot needing correction, adjustment or replacement is located.

All presses are tested as outlined before leaving the factory and a record chart is preserved. After a press has been in service until it shows wear on the forms it

(*Continued on Page 60*)

PRODUCTION —SPEEDY and PROFITABLE

is assured all users of the KLUGE AUTOMATIC PRESS

SPEEDY, because the Kluge is equipped for fast production on all kinds of letterpress work, including halftones and color jobs. An average run of 2500 an hour can be doubled when the job will permit the use of the Kluge Two-Up Attachment, and with a press built as the Kluge is built you can keep this up twenty-four hours a day during a lifetime of service at an upkeep cost that is practically negligible. There is no time lost in changing jobs on the Kluge. It needs very little makeready and the same set of suckers and register adjustments will cover all weights of stock up to 140-lbs.

The HEAVIEST PRESS of its size - yet the MOST COMPACTLY BUILT and EASIEST to OPERATE!

PROFITABLE, because the wide range of work possible on the Kluge can be turned out with the least expenditure of time, labor and power—which means that you cannot produce printed impressions at lower cost than on the Kluge. This goes for the run of the hook, including die-cutting and embossing. Size is the Kluge's only limitation and, at that, it will take an oversize sheet when necessary. Kluge users will tell you that, under normal conditions, the Kluge will more than pay for itself.

BRANDTJEN & KLUGE, INC., Manufacturers

ST. PAUL • • MINNESOTA

Branches with Operating Exhibits:

NEW YORK.....77 White Street	DETROIT.....1051 First Street	ATLANTA.....150 Forsyth Street, S.W.
PHILADELPHIA.....253 N. 12th Street	CHICAGO.....522 South Clark Street	SAN FRANCISCO....451 Sansome Street
BOSTON.....27 Doane Street	ST. LOUIS.....2226 Olive Street	LOS ANGELES...1232 S. Maple Avenue
	DALLAS.....217 Browder Street	

CANADA: SEARS LTD., Toronto, Montreal, Winnipeg, Vancouver

Equipment and Supplies

Improved Lever Paper Cutter

Added to the Challenge line of lever paper cutters is the new 305, incorporating in a 30½ in. model all the features of the Challenge 265 (26½ in.) Lever Paper Cutter, it was recently announced by The Challenge Machinery Co. The Challenge 305 and 265 are identical in design, each having principles of operation that reduce the physical effort necessary to execute heavy cuts. The round chromium-plated, all-steel lever is scientifically curved to provide maximum leverage.

These Challenge Cutters have a solid center support to prevent sag in the table and insure the cutting of the bottom sheet in every lift. A wide, anchored arch, solid side frames and special brace half way between the cutting stick and the rear of the table add to the strength and rigidity of the machine.

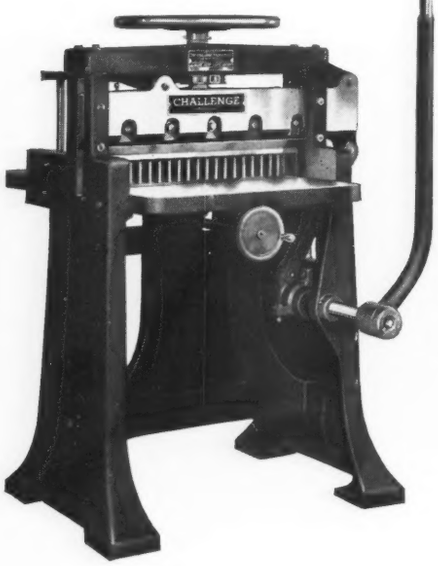
A special six-spoke, dished hand clamp wheel has been provided with sufficient clearance for the operator's hand between the wheel and the top of the arch. The duplex steel measuring tape is marked in both 1/16 and 1/12 in. graduations. The indicator on the front of the tape scale is the "hairline" type used on surveying instruments.

Further refinements include a new arrangement of the knife bar that provides for tightening all capscrews without raising the knife bar from the table; extra wide, polished knife bar; wide feet on an extra heavy clamp to prevent marking of stock, and the latest type adjustable back-gauge.

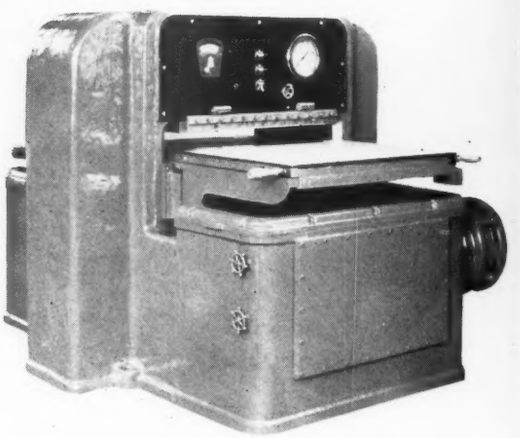
Further details on either the Challenge 305 or 265 Lever Cutters are available from the manufacturer.

P-Double-E File No. 5&0.

Improved Challenge Lever Paper Cutter made in 30½ in. and 26½ in. models. Manufacturer states each has principles of operation for reducing physical effort necessary to execute heavy cuts.



View of Watson-Stillman Company Automatrix Direct Pressure Molding Press. Platen size is 30 in. by 24 in.



The Automatrix

The Automatrix Direct Pressure Molding Press is designed especially for matrix molding. Manufacturers state the actual molding time for dry mats, under normal operating conditions, is approximately 10 sec., or six complete cycles per minute. With its heating system, mats may be hot molded in the shortest possible time.

Operation of the Automatrix is controlled entirely by push buttons, one on each of the cabinets housing the operating equipment. This arrangement permits operation and control of the press from either end. Pressure, temperature and timing controls are fully automatic. The pressure required for each individual job is accurately controlled by means of a hand-set pressure controller. The timing of the pressure and heating cycles are automatically controlled by hand-set electric timers. An adjustable electric indicating thermostat, controlling the temperature of the heating plate and a pressure gauge graduated in tons load and pounds per square inch are mounted on the rear panel. A switch is provided for changing over from cold to hot molding.

The ram is ground, polished and chrome plated and is packed with a special heat resistant packing and is water cooled. The heating plate is equipped with 18 heating units rated at 700 watts, 230 volts. Insulation is provided between the heating plate and platen. Top plate is free vented to accelerate drying when molding wet mats. The sliding plates which may be operated from either end of the press are made of ground and polished chrome vanadium steel.

Capacity of the press is 800 tons; maximum opening is 2½ in.; platen size is 30 in. by 24 in.; overall length, 6 ft. 7 in.; overall width, 5 ft. 3 in.; overall height, 4 ft. 7 in.; approximate total weight, 20,000 lbs.

P-Double-E File No. 2G10.

Fratex Packing Material

Frazier Processes, Inc., manufactures six kinds of resilient packing material for cylinder and rotary printing presses, each of which is identified by a different color. The purpose of the packings is to supply a suitable cushion or contact between the metal surface of the impression unit and the hard surface of the type form or plate. Manufacturer states Fratex materials possess a resilience which defies time and pounding impressions and definitely compensate up to certain limitations for the inequalities and irregularities in the surfce of the type form. Fratex, it is claimed, will not spread or mat, nor is it affected by naphtha or oil.

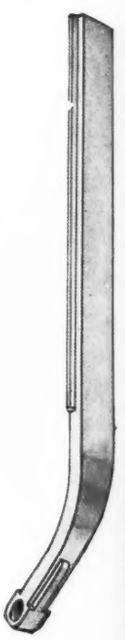
Fratex Resilient Packing Material is supplied in the several grades, as follows: Resilient top sheet, 0.010 in. thick, heavy resilient top sheet for rotary presses, 0.014 in. thick; resilient second sheet, 0.014 in. thick; packing sheet, 0.022 in. thick; packing sheet, 0.022 in. thick; resilient cloth blanket; and a sheet called "Firmo" 0.010 in. thick, which is intended to resist impression but yield enough to conform with the makeready.

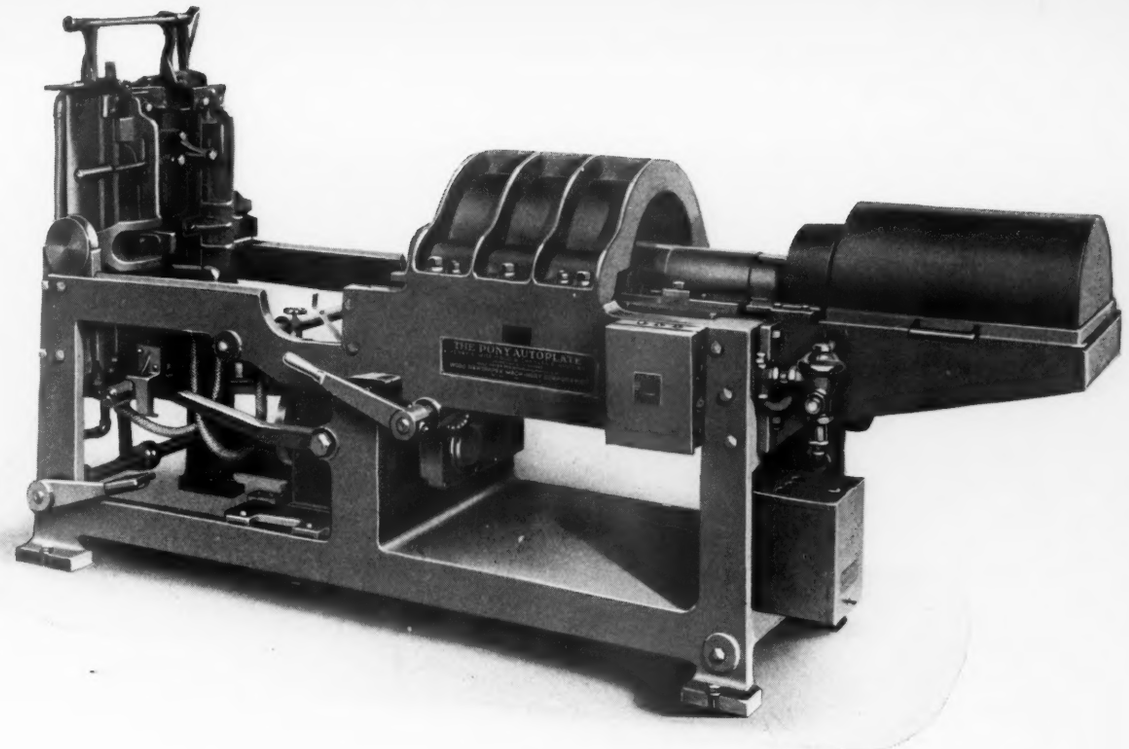
P-Double-E File No. 5L.

Ejector Blade Controller

The Linotype Parts Company announces development of an ejector blade controller for application to Linotype machines with hardened steel inserted eye piece at lower end. An extension ledge, states manufacturer, insures that the slug will be pushed out into the galley at ejection and the purpose of the ledge is to compensate for wear in the entire slug-ejecting mechanism.

P-Double-E File No. 1G8.





Why it pays to use the PONY AUTOPLATE

. . . as expressed in recent letters from Pony Autoplate Users

1. **BETTER PRESSWORK.** "It has been of great assistance in the improvement of the appearance of our newspaper."

2. **FASTER PRODUCTION.** "It has largely solved the production problem in our Stereotyping Department."

3. **SAVES TIME.** "It has enabled us to turn out our editions on scheduled time."

4. **SAVES ENERGY.** "It has minimized the hard work formerly spent in lifting plates from one piece of equipment to another."

5. **QUALITY.** "We were awarded first prize for best presswork among our State's newspapers in the 20,000 to 60,000 population class."

6. **EFFICIENCY.** "It enables us to produce first-class plates at moderate cost."

7. **DEPENDABLE.** "We have not had a bit of trouble with our Pony Autoplate from the day it was installed."

8. **DURABLE.** "It has worked 16 hours out of every 24, has cast 150 to 200 plates each day for 15 years, and is still in fine working condition."

9. **VERSATILE.** "It is almost human in its cycle of operations—casting, removing tail, shaping the cast exactly to printing curvature while it is plastic, shaving the plate to an accurate and uniform thickness, performing all operations necessary to finishing the plate, and bathing and delivering it ready for the press."

10. **INDISPENSABLE.** "It would be very difficult to operate a newspaper of our size without a Pony Autoplate."

Write for printed matter about the Standard Pony Autoplate, which now sells for $4,575; or, for a larger newspaper, the Heavy-Duty Pony Autoplate.

WOOD NEWSPAPER MACHINERY CORPORATION

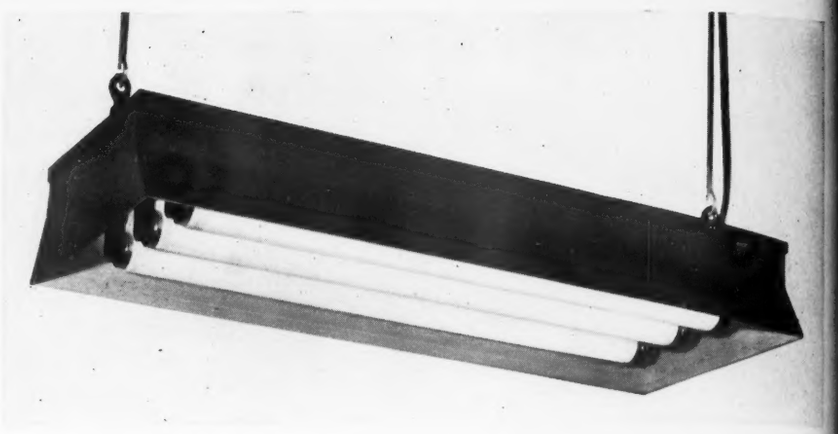
PLAINFIELD, NEW JERSEY — **NEW YORK OFFICE: 501 FIFTH AVENUE**

60-Foot-candle Lighting Fixture

A fluorescent lumiline lamp fixture for color examination and general inspection work has been announced by Barkon-Frink Tube Lighting Corp. Shown in the illustration is Model FB-324, which utilizes three 24 in. Daylight Fluorescent tubes. These are the new mercury discharge tubes with fluorescent coating on the inside of the tubes which becomes luminous by the action of the ultra-violet radiation of the mercury arc. The quality of the light produced closely approximates that of Carbon Dioxide and is said to be an excellent source of light for color grading.

The complete unit measures 4¼ in. by 11½ in. by 28 in. The unit can be operated on 110 v., 60 cycle, single phase, or 220 v., 60 cycle, three phase. The unit is rated at 60 w. and produces approximately 35 lumens per watt.

Fixtures are designed for multiple hanging where large areas are to be lighted. Units are hung approximately 3 ft. above working area and produce an average illumination of 60 foot-candles. Finish is black enamel. Reflector is white porcelain. Transformer equipment is enclosed in lamp housing.



View of Barkon-Frink 60 Foot Candle Fluorescent Lamp Fixture for color examination and general inspection work.

New DeVilbiss Air Gun

A new air gun has been announced by The DeVilbiss Company. Known as Type DGA, this improved gun has an air capacity of 13 cu. ft. at 80 lbs. pressure and is small enough to be held completely within the hand.

The gun is operated by closing the hand around the gun in any reasonable position,

and squeezing the one-piece thumb button and valve stem located in the middle of the gun body.

An opening is provided in the zinc die casting body for hanging the duster on a hook when not in use. A removable brass nozzle is threaded into the gun body. Exterior parts of the gun are dull nickel plated, rounded to fit the hand comfortably. Air valve spring is cadmium plated to prevent rusting.

Complete information on the Type DGA air dusting gun may be secured from The DeVilbiss Company direct, or in care of *Printing* Equipment *Engineer*.

New Matrix Faces Cut By Intertype

Intertype Corporation announces Cairo Extra Bold Condensed duplexed with medium weight in 18 and 24 point two-letter matrices. Two-line

ABCDEFGHIJKLM $123
ABCDE abcdefghi 123
ABCDE abcdefghi 123

examples are shown here. Bodoni Thin has been completed in sizes 24 to 60 point. A line of 30 point is shown.

Employment and Service

Employers, production and mechanical executives may insert notices in this department.

Items for this department may pertain to the following subjects: "Executive Wanted," "Association or Partnership Wanted," or "Position Wanted," readers referring to subjects of a personal nature such as obtaining information about addresses of executives, supplying copies of technical articles and magazines, patents for sale or requests for contacts for developing and/or financing of inventions.

Any reasonable request from an employer or mechanical executive for the printing of a notice upon a subject other than the ones listed above will be granted.

Notices may be printed under the following regulations: First insertion (maximum six lines) is free of charge. All subsequent insertions of the same item subject to a charge of 75c per line in advance.

Address all communications with box number to *Printing* Equipment *Engineer*, 1276 West Third St., Cleveland, O.

WANTED—Printer, now employed as sales and production manager of rotogravure department, thoroughly experienced in all printing processes, who personally can produce a complete job—desires position as sales representative for printing equipment, ink or paper manufacturer or as production manager or assistant to head of large printing establishment. Reply Box 56.

MANUFACTURER WANTED—Printing executive wants connection to take over manufacture and sales of recently patented device for raising automatically the assembling elevator on Linotype, Intertype or Linograph machines. Thoroughly tested for practical use. Reply Box 55.

EXECUTIVE—Wide experience as estimator and superintendent in commercial printing plants open for position. Have served large plants but will consider connection with small or medium-size growing concern. Best of references. Reply Box 57.

FINANCIAL ASSISTANCE—Perfected photographic type composing devices, operating with direct light rays and reflected light, suitable for newspaper, book publisher, commercial and advertising copy work, etc., incorporating automatic justification and proofreading during operation, standard keyboard, for first and only original film (positive or negative), for all printing methods without photography; direct etched relief alloy plates for letterpress rotaries; also offset, gravure, etc. Excellent opportunity for assistance financially or otherwise, to follow up pending negotiations. Confidential references. Reply Box 58.

S.N.P.A. Mechanical Conference Dates Changed

It has been announced that the meeting dates of the Southern Newspaper Mechanical Conference have been changed to September 19 and 20 at the Atlanta Biltmore Hotel, Atlanta, Ga. The change was made by reason of a conflict in dates with the ITU convention to be held in Birmingham earlier in the month.

W. A. Carns, Mechanical Superintendent of the Birmingham News *and* Age-Herald, *is chairman of the Committee on Arrangements and will preside at the Conference.*

As will be seen by referring to the editorial feature, "Evolution of the Newspaper Mechanical Conference Idea" on another page of this issue, the S.N.P.A. mechanical conference has been divided into two territories. This is the Eastern Division conference.

Connell In Charge of S.N.P.A. Displays

Fred Connell, Composing Room Superintendent of the Atlanta *Journal*, acting for the S.N.P.A. Mechanical Conference Committee on Arrangements, is in charge of the exhibit spaces for the Atlanta Conference which will be held at the Atlanta Biltmore Hotel, September 19-20. Details for location of exhibits are being worked out by Mr. Connell and the Atlanta Biltmore Hotel. Preference for space will be given in the order of requests to the Hotel.

The S.N.P.A. Committee on Arrangements is comprised of W. A. Crans, Chairman, Birmingham *News* and *Age-Herald;* I. J. Gardner, Chattanooga (Tenn.) *Times;* John P. White, Charlotte (N. C.) *Observer;* W. B. Sandlin, Miami (Fla.) *Herald;* T. C. McLemore, Mobile (Ala.) *Press-Register;* F. K. Forstall, New Orleans (La.) *Times-Picayune* and *States.* George W. Holloway is no longer connected with the Nashville (Tenn.) *Banner.*

Burlap Bag Inks
Magazine Blacks
Comic Colors
Tin-foil Inks:
Lithographic Inks
Glassine Inks
Rotary Blacks
Bread Wrapper Inks
Milk-bottle Cap Inks
Tin-foil Inks
Tin-printing Inks
High-gloss Inks
Job Inks
Corrugated and Fiber-board Inks
Halftone Inks
Carton Inks
Blacks and Colors
Offset Inks
Gold and Silver Inks
Process Colors
omic Colors
Non-scratch, dull-finish Inks
Burlap Bag Inks
Blacks and Colors
Cellophane Inks
Glassine Inks
Kraft Bag Inks
Non-scratch Inks
News Blacks
Web-press Colors
Gravure Inks
Non-scratch, dull-finish Inks
Process Colors
Cotton Bag Inks
Kraft Bag Inks
Lithographic Inks
Enamel Bag Inks
Gravure Inks
Label Inks
Non-scratch Inks
Carton Inks
Magazine Blacks
Halftone Inks
Tin-printing Inks
Corrugated and Fiber-board Inks:
Web-press Colors
Cotton Bag Inks
Enamel Bag Inks
News Blacks
Gold and Silver Inks
Label Inks
High-gloss Inks
Cellophane Inks
Bread Wrapper Inks
Rotary Blacks
Milk-bottle Cap Inks
Job Inks
Offset Inks

Strip Film

In offset-lith and photo-engraving plants—Camera and stripping room operations and adhesives discussed.

By ADAM HENRI REISER

A MID-WESTERN reader is intrigued with the idea of using strip film in his printing and lithographing plant, and writes in for some information. In his letter he tells of having heard of its use in photo-engraving plants as a substitute for wet plate, and wonders whether he has been misinformed. It is his desire to replace wet plate with strip film in his lithographic camera room if it is feasible.

Someone once remarked on the harmful practice of forming habits. There seems to be some basis for this contention when the use of wet-plate in modern lithography is considered. Justification there may be for wet-plate in widely scattered instances; but strip film, along with regular film and dry plate have been developed to that state where they are as pliable in their working as wet plate ever was, besides being far more satisfactory. While even the regular dry plate may be stripped, a special dry plate specifically for stripping has been developed just recently by Eastman Kodak.

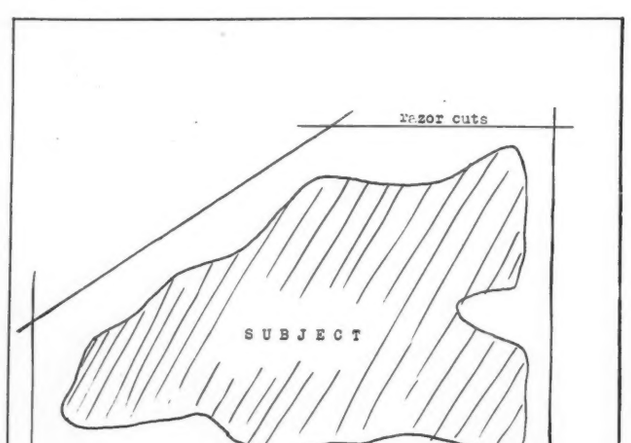


Fig. 1.—This diagram shows an exposure on strip film. The film is laid, emulsion side up, and the subject is outlined with a sharp razor blade.

Countless writings have enumerated the difficulties and general sloppiness that the wet plate has occasioned in photography. Many have told of the sink negatives and exposure troubles brought on by unstandardized methods of coating and sensitizing the plates. Strip film with its standardized manufacture therefore assures a film for stripping that rivals the accuracy of dry plates and regular film.

Description of Strip Film

What is strip film? It is a highly contrasty film with a transparent base. The film is for use with the regular open white-flame carbons used in lithographic camera work. Strip film is supplied in sheets of the regular dry plate sizes running from 4 in. by 5 in. to the large size of 20 in. by 24 in., or it may be purchased in roll form of 100 ft. lengths, running from 6 in. to 19 in. width. It is an orthochromatic material, sensitive to yellow, green, and slightly to orange.

Strip film really consists of two separate elements. A transparent base supports a thin membrane which contains the emulsion and its sensitive salts. The thin membrane may be removed after development from its base just as the film of wet-plate, or, it may be kept on the base without removal. The membrane floats off in any solution that is too warm. Therefore, temperatures of all solutions used on it must remain below 65 deg. if the film is to be kept intact.

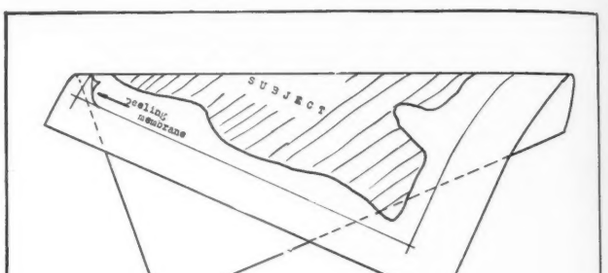


Fig. 2.—Shows one manner of bending the strip film. Properly cut, the membrane usually releases from the base at the intersection of two cuts.

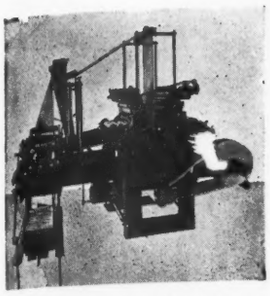
When strip film had a white backing in its early stage it proved bothersome. The support had to be removed in tepid water. At times this proved obstinate and hard to separate from the membrane, The present form, with its transparent base separates readily.

This transparent base not only permits inspection by transmitted light, but also permits shooting through the back. A two-fold advantage is thus attained. Reversal may take place without the reversal mirror or prism. Then, too, stripping is helped considerably by this feature in that the emulsion side may be stripped down to the material being used as a base, thus assuring adhesion without any extra precautions. The transparent backing is particularly useful in making contact positives. With a ceiling-high light source, no difference is noted in the final, whether made through the back or direct to the face.

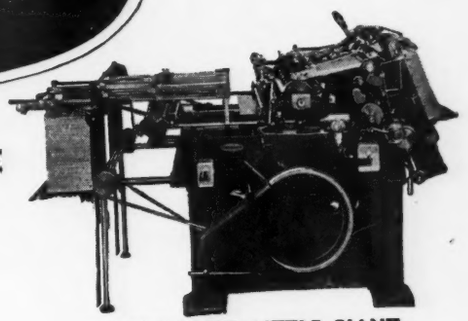
In stripping wet plate, the film could be turned either side down to the glass, and be assured of sticking. With strip film this is not so. Many solutions have been used and suggested for use in fastening the strip film to the base used, be it glass, film, acetate sheeting, or gelatine. In the early use of strip film, gum arabic and paste were at first employed to keep the membrane

(*Continued on Page 64*)

PRINTING WEBENDORFER PRESSES



PATTERN CHARTS

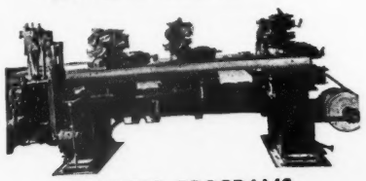


WEBENDORFER LITTLE GIANT CYLINDER PRESS

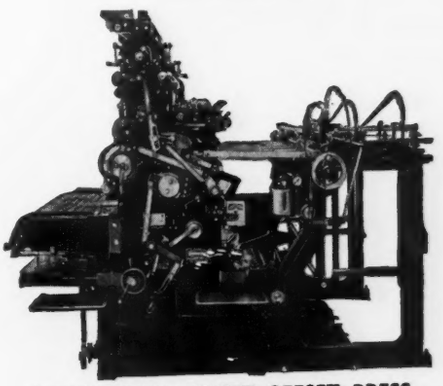
WEBENDORFER LINE

Sheet Offset
12 x 18
17 x 22
22 x 29
26 x 40

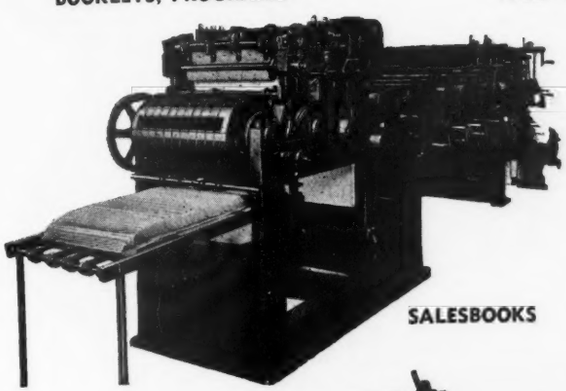
Letter Press
Little Giant
Web Reel Unit Offset
11 x 17
17 x 22
22 x 34
25 x 38
and up



BOOKLETS, PROGRAMS

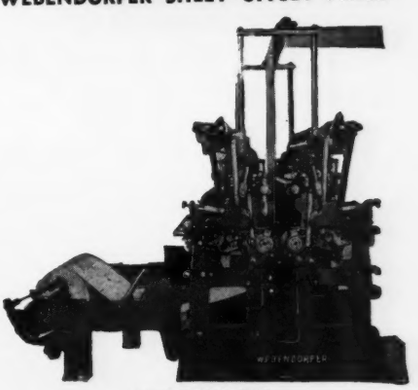


WEBENDORFER SHEET OFFSET PRESS

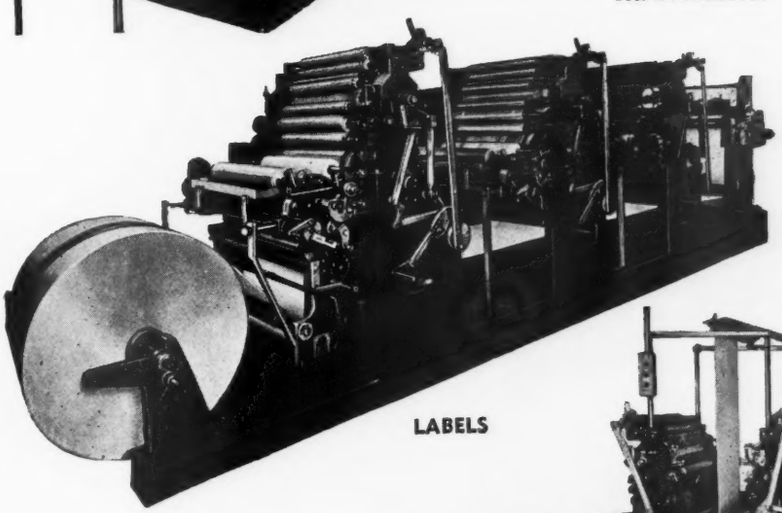


SALESBOOKS

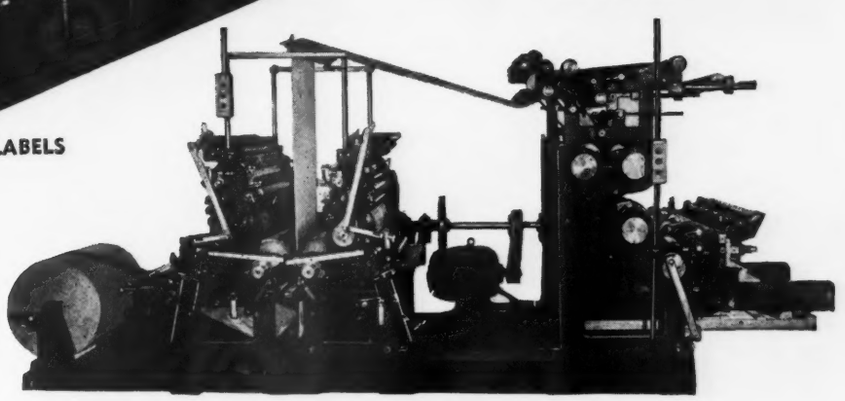
Write for Full Information



NEWSPAPERS



LABELS



MAGAZINES

American Made by

WEBENDORFER-WILLS CO., INC.

Builders of Printing Machinery for Over Thirty Years

MOUNT VERNON, NEW YORK, U. S. A

The Right to Demand

By EDWIN H. STUART

NO print shop proprietor, superintendent or foreman has a right to question any compositor's good intent or desire to produce until that proprietor, superintendent or foreman places material in front of the compositor which will enable him to produce. The same goes for composing machinery—keep the machines in good operating condition and you will then be in a position to demand production.

Easy to Produce

(*Continued from Page 4*)

The frame is then placed on the work top of the type cabinet where the composition will be placed within the frame. All units of composition in the Stuart establishment are framed in this manner not only to provide composition in exactly dimensioned units, but also to avoid winding and unwinding the string which is shoved into the metal furnace along with the metal when unit is to be melted.

Spacing Material

The compositor's type cabinet and work top is of the conventional variety seen in many composing rooms. However, several features have been added to make the work tops convenient so the compositor need not waste motion in doing his work. As is shown in Fig. 3, an old-style space and quad case rests at one end of the work top. The position of the case is reversed so that the thin spaces are nearest to the compositor's hand and the largest space the farthest away from his hand. The case carries, in addition to the spaces, quads from 6 pts. to 36 pts. only. The space boxes are arranged to carry 6, 8, 10, 12, 14, 18, 24, 30 and 36 pts. The first half of the case carries spaces to 30 pts. only. The second half carries 36, 42, 48, 60 and 72 pt. spaces. In the rear compartments of the space and quad cases are carried quads of the following widths: 1, 1½, 2, 2½, 3, 3½, 4, 5 and 6 picas.

Directly under each compositor's work top (visible in Fig. 1) is a specially designed case containing metal furniture in widths 2, 3, 4 and 6 picas. Special compartments in overhead tray carry 1 pt. leads from 36 to 48 picas inclusive.

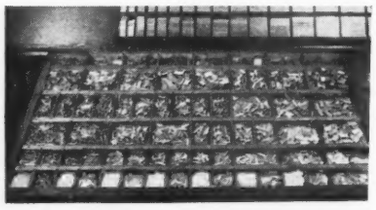


Fig. 3.—In the Stuart Typographic Service plant, Pittsburgh, each compositor's work top is provided with an inverted space and quad case filled with quads and spaces from 6 pt. to 72 pt. It is not necessary for the compositor to move more than 3 ft. in any direction to get material needed to complete the job at hand.

Fig. 4—Characteristic of the attention paid to all detailed operations in the Stuart Typographic Service composing room, in Pittsburgh, is this cabinet and rack mounted just back of the Rouse Rotary Mitering Machine. All Monotype-cast rule, border and page frame strips are laid on the side between wooden partitions to preserve the printing edges of the rule and border.

Fig. 5.—Have you ever seen so many thin spaces? They're important things in the life of Stuart Typographic Service, Pittsburgh. The spaces (metal and cardboard) are contained in pint Mason glass fruit jars. The cutter shown in Fig. 6 will cut enough spaces to fill one of these jars in 10 minutes.

Fig. 6.—Power thin space cutter devised in plant of Edwin H. Stuart, Inc., Pittsburgh. Cuts thin spaces at the rate of 400 per minute without difficulty. Point-wide size of spaces is regulated by an end guide on the cutter frame.

Fig. 7.—Distribution Bank employed in composing room of Edwin H. Stuart, Inc., Pittsburgh. Where foundry type is to be distributed, it is brought to this bank, each series is sorted out and placed by series on the galleys. There are 18 galleys, 6 in each rack. Claimed to save 50% in distribution time.

To sum up the arrangement of the spacing mterial: Each compositor has immediately behind him spaces and quads ranging from 6 to 72 pts. At his belt buckle he has metal furniture from 2 to 6 picas in width, and in lengths: 10, 15, 20, 25, 30, 35, 40, 45, 50 and 60 picas. In front of him he has 1 pt. leads, 2 pt. leads and 6 pt. slugs from 3½ picas to 48 picas. The cases are kept full of type, to all of which Mr. Stuart supplements "Why shouldn't our compositors produce?" Compositors are not permitted to hunt for type, slugs or any sort of spacing material. The material is brought to them by apprentice boys.

Distribution Bank

One of the novel features of the composing room is a distribution bank, innovated by Mr. Kinnard. The bank consists of an overhead stand mounted upon a cabinet with inclined shelves arranged in three tiers to hold 18 galleys. Dead type is brought to the work top and is segregated—the foundry type is placed on the inclined shelves. For example: All Beton is placed on one galley, all Gothic on another galley and all Stymie on another. The compositor takes a galley,

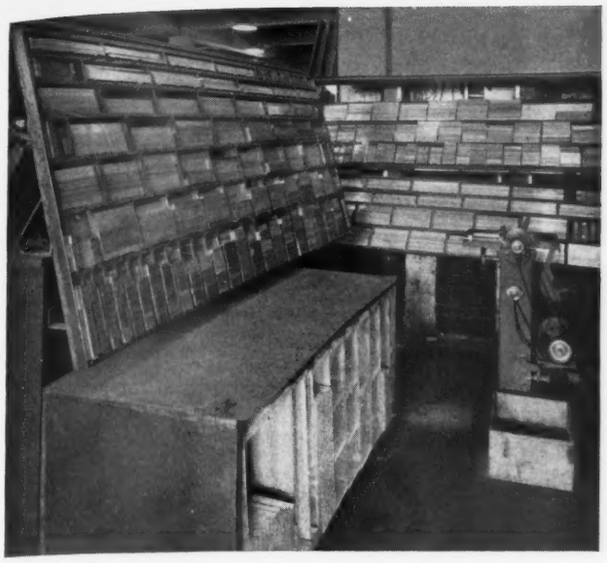


Fig. 8.—Slug storage in plant of Edwin H. Stuart, Inc., Pittsburgh. Strip material is brought from the Monotype room to the saw shown at the right and is cut into proper lengths. This special slug storage bank will hold two tons of slugs ready for use, and the lead storage about one ton.

stands in one spot and distributes the series. This plan saves 50% in the cost of distribution.

Cut Storage

Over $12,000 worth of cuts are kept in a file. The cuts are stored in boxes, each of which measures 10 in. by 14 in. The boxes are placed in the file compartments edgewise. A box number is supplied for the exposed edge of the box. On the lid of each box is pasted a proof of each cut in the box. Proof of each cut is kept in a catalog in the office. Each cut is stamped with a steel die which marks on the cut the number of the box in which the cut is stored. After having been used, the cuts are placed in an accumulative drawer. Later on, at periodic intervals, the cuts are restored to the right box according to the number on the cut. This system makes it possible for the customer to select any cut he wants from the book in the office. Any cut can be located in 20 seconds.

Thin Spaces

It is a matter of pride with executives of Edwin H. Stuart, Inc., that a complete range of thin spaces of all sizes is kept on hand constantly to secure artistic effects with type. For thin spaces, 2 pt. leads are used from 12 pt. to 42 pt. inclusive; 1 pt. leads from 6 pt. to 36 pt. inclusive, and paper spaces from 6 pt. to 24 pt. inclusive. They are contained in pint-size glass fruit jars kept on top of a type storage cabinet. Paper thin spaces used in the non-distribution system are thrown into the furnace with the type, rise to the top of the metal and are skimmed off.

Do Not Wind or Roll Thin Papers

IT IS customary to wind or roll lifts before placing them on the feed table of self-feed presses but this should not be done with tissue and other thin papers. These come in wraps with a sheet of cardboard on the top and bottom. The ream should be very carefully removed from the wrap without removing the cardboards and kept with edges even and square as it is placed snugly but not jammed against the front and the controlling side feeder stock guides. The other side and the rear stock guides are then brought almost but not quite into contact with the tissue when the lifts have all been placed on the feed table. As the run proceeds, the cardboards are removed by hand as they come to the top of the pile, every five hundred sheets. This method will be found much better than winding tissue because it is difficult and takes time to get it even on the edges after winding. The tissue tends to feed continuously with the edges kept even.

Equip Your Presses With These Money Making and Time Saving Developments

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Mechanical Executives

File manufacturers' technical literature and valuable articles according to the

P-Double-E Filing System

Printing Press

(*Continued from Page 25*)

The factory Engineering Department is in charge of methods, machinery and tools, and is constantly on the look-out for better machinery or ways of obtaining more accurate or more economical production.

Work in progress *i.e.*, various press parts, goes through various departments. Each department specializes in a certain phase of work such as milling, drilling, etc. Each department is under the supervision of a foreman who is expert in the work. Work is inspected in the departments at each machine and also before going to stock to provide interchangeability of parts.

Various large parts are received on the erecting floor direct from the shop. Other parts come from finished stock and many of the small assemblies are furnished by the assembly department ready to be applied direct to the press.

As these parts have been produced under a tooling and gauging system, there is a minimum of hand fitting which makes for interchangeability and quick service of parts to customer when necessary.

The erecting floor is large, well-lighted and is completely served by cranes. One side of this floor serves as a shipping department with a switch track along one wall.

Research and Display Department

Miehle Printing Press and Manufacturing Company maintains a Research and Display Department. No more fitting display of Miehle products can be presented than is on exhibition in this department at the factory. Excellent quarters have been provided for exhibiting to the visiting printers the newer types of presses under actual operating conditions. The exhibit shows a model job pressroom ready for operating, together with necessary auxiliary pressroom equipment, also printed samples of work done on these automatics. A large space is devoted to the showing of larger flat-bed single and two-color presses, also offset presses, ready to operate.

In addition to the machinery on display, the adjacent rooms are smartly furnished for the comfort of visitors. Close by is the library section containing books and current publications on printing; printed specimens of all kinds, useful statistical data on processes, machines and production information, all of which is up to the minute, for the printer's benefit. Printers who contemplate a replacement or extension program are cordially invited to call and visit this department. No claim is made that the Miehle organization is composed of efficiency experts, but in this organization men who study and investigate all phases of printing and allied branches to enable them to offer counselor service to the printer, after which he makes his own decisions.

Miehle Foundry Products

In making fine machinery it is essential that the best engineering, workmanship and materials be incorporated. The length of life of any machine is dependent upon the quality of materials, the workmanship put into the component parts and upon the user for the care he gives it by way of lubrication, etc.

The foundry products used in Miehle presses are made in twenty-five foundries because of the quantity and variety of castings needed to meet requirements. Thirty irons of different characteristics are used regularly. Every one of about 18,000 patterns in regular use has an iron assigned to it to fit the use to which the part is put. In addition to iron castings, steel, malleable, aluminum, aluminum alloy, various compositions of bronzes, and so on are used.

The foundries are closely supervised by Miehle representatives just as if they were departments in the Miehle plant. Physical and chemical checks and strict inspection are made constantly.

The materials used in the manufacture of Miehle presses range from the smallest taps and drills to the giant machines in the Planer Department. In a normal year purchases of some of the larger items are as follows:

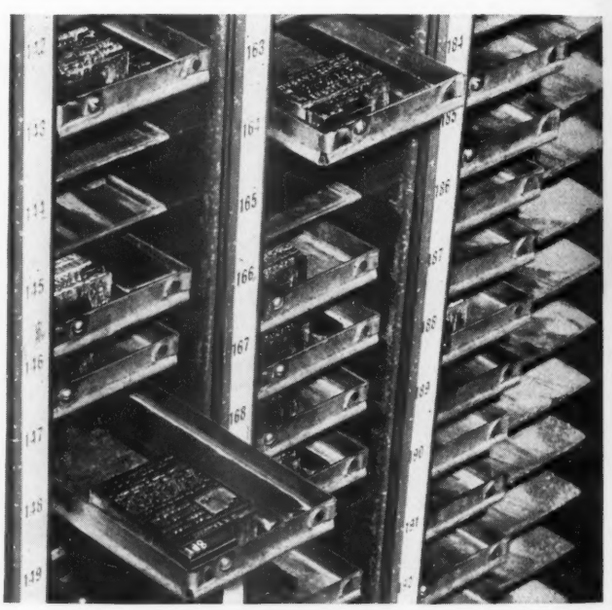
Grey Iron Castings	7000 Tons
Cold Finished Steel	1200 Tons
Steel Tubing	150 Tons
Lumber	1,500,000 Feet
Coal	7000 Tons
Bearings	18,000 Pieces
Bakelite Gear Blanks	11,500 Pieces

Addition To Factory

The Norma-Hoffmann Bearings Corporation, Stamford, Conn., due to an increasing demand for its ball, roller and thrust bearings, has just completed an extension to its present buildings and has placed substantial orders for new machine tool equipment.

Numbering Proofs Automatically

In the June issue of *Printing* Equipment *Engineer*, the ad galley filing system in use in the Cleveland *Plain Dealer* composing room was described. The method of fastening number slugs on the ad filing system galleys is shown in the accompanying illustration. The numbers were cast on a Ludlow slug in 36 pt. Gothic. The slugs



with underpinning were trimmed to 10-em measure. A hole was drilled and tapped in each galley head and the slugs, and an 8/32 rnd. hd. screw inserted to hold the slugs securely to the galley. When a proof of the advertisement on the galley is taken, the galley number is printed automatically on the proof sheet. After proofing, the galley bearing the ad is filed in the slide which bears the number corresponding to the number fastened to the galley.

TO ENGINEERING MINDED EXECUTIVES:

● You have only one sound method of judging the results to be expected from men, machines and working conditions, and that is through *production standards.*

● To be of the utmost value to you, these standards must be high enough to require reasonable efficiency, low enough to be within the capabilities of workmen and equipment regularly available, flexible enough to provide for every variable ordinarily encountered, simplified enough to permit of instantaneous application.

● For you to adopt and apply such standards with confidence, they should be in profitable and enthusiastic use by leaders in the industry—top-flight executives of commercial plants, private plants, trade plants, publishing plants, specialty plants; endorsed, after exhaustive investigation, by leading printing trade associations, both national and local . . . they must represent a vast background of study and analysis; provide for constant, modern supplementary and revision service.

● All these basic qualities, and many others, are the essence of

PAR FOR PRINTERS
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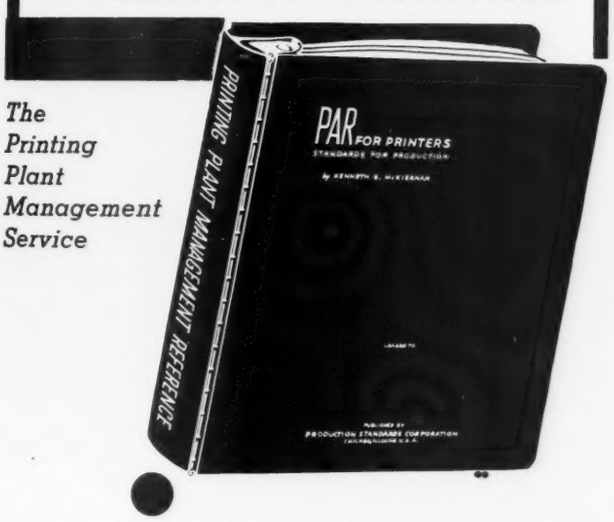

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● How often production executives have said, "I can get by," and then had metal trouble snapping at their coat tails? It is no uncommon experience to make bad guesses because we humans feel most confident just before trouble occurs.

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Effect of Cooling on Grain Structure and Hardness of Stereotype Plates

By LESTER YEAGER*

IN the past few years we have seen a great many changes and improvements in stereotyping and presswork, with corresponding improvements in the quality of the printing in our daily newspapers. Of all the advances and improvements that have been made, both in the stereotype room and in the pressroom, the one thing that has changed the least is the strength and wearing qualities of stereotype plates. While the presses have been speeded up to a point where a stronger plate is desirable, plates of today are of about the same strength as they were years ago. There is also little difference in the wearing qualities. There is little difference in either strength or hardness, and metal formulae are little different than years ago.

What is Really Needed

What is really needed is a study of what happens to the alloy under the actual conditions that prevail in the stereotype room. The changes that take place in the alloy under different cooling conditions are as important in regard to strength and wearing qualities as are the proper amounts of tin and antimony. The best of stereotyping alloys, improperly cooled, will not produce good plates with the maximum hardness and strength.

With the idea of finding out exactly which method of cooling is best, and investigating just what happens to the plate during the cooling process, I started making some experiments about three years ago.

After making quite a study of the subject with the aid of a good microscope and a home-made camera for taking photomicrographs, I found such interesting and remarkable changes taking place during the cooling process that I enlisted the aid of Prof. H. Vance White of the Department of Metallurgy and Metallography at Virginia Polytechnic Institute. That was a little over a year ago, and since that time, Mr. White's study of the subject, the photomicrographs he has made, and his excellent knowledge of the work, has not only added much to what I had believed, but has also given positive proof of the importance of proper cooling to stereotype plates.

Special Machine for Hardness Tests

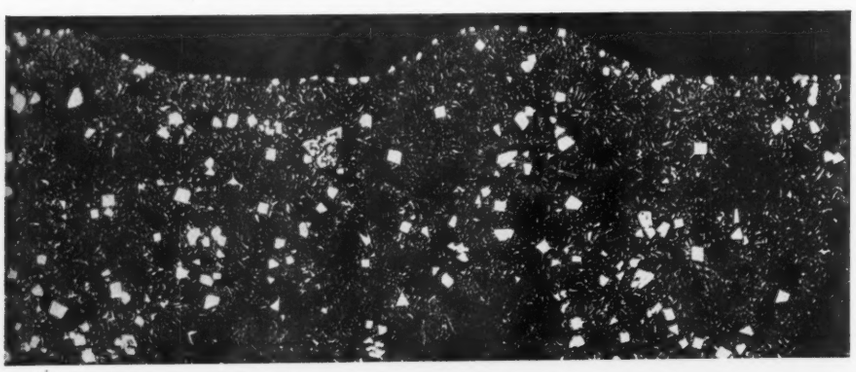
There is still much to be done on the subject, and the work is by no means finished. Mr. White deserves a lot of credit for the painstaking efforts he has made to contribute to this subject. He has made several sets of photomicrographs, has checked many plates from various kinds of casting boxes, and has designed and built a special machine for making more accurate hardness tests. The ordinary hardness tests, made by exerting pressure on a steel ball which penetrates the metal to a certain depth, actually gives a reading of the initial hardness of the metal, plus the hardness induced by the ball in cold working the metal. Mr. White has devised a machine which gives a more accurate reading, due to reducing the hardness created by the cold working of the metal by the steel ball. His machine gives the initial hardness, plus only a very slight cold working, probably not more than is created by the pressure on the plate in actual service.

**Production Manager, Indianapolis* Star. *Abstract of paper delivered before the Toronto A.N.P.A. Mechanical Conference, June, 1938.*

Fig. 1—Cross-section views of stereotype plate, X100, made by Lester Yeager, Production Manager of the Indianapolis Star. *The upper section of this figure represents the printing surface of the plate and shows two halftone dots. The lower section represents the inside of the plate (the surface which fits against the press cylinder).*

In this section note the almost perfect layer of antimony at the surface of the halftone dots where it is needed for hardness. These photomicrographs show the fine grain structure obtained by rapid cooling of the core surface of the plate. When cooled in this manner, the antimony crystals have a tendency to cast on or near the printing surface of the plate. At the time of casting this plate, the temperature of the outer part of the casting box was 190 deg. F. Core temperature was 65 deg. F. Stereo metal temperature was 610 deg. F. The metal formula at the time of casting both this plate and the one shown in Fig. 2 is as follows: Antimony, 13.20; tin, 5.03; arsenic, 0.043; copper, 0.02; balance, lead.

As compared with the same plate section in Fig. 2, note the absence of antimony crystals in the lower or base section of the plate, the crystals having cast near the printing surface owing to the rapid cooling method.



Difference in Grain Structure

These photomicrographs give a very clear idea of what happens to the grain structure of the stereotype alloy during the cooling process. These show a cross section of a stereotype plate, taken from the printing surface of a halftone, through the plate to the back, and are approximately 100 magnifications. The grain structure in the two pictures is so different in appearance that they look like two entirely different metals. However, they are not; both were cast from the same pot of metal, at the same temperature, within only a few minutes of each other. The difference is caused by the rapid cooling of one, and the slower cooling of the other.

Analysis of Metal

The analysis of the metal is as follows: Antimony, 13.20%; Tin, 5.03%; Arsenic, .043%; Copper, .02%; Lead, 81.707%. The coarse grained plate was cast in a box with a temperature of 190 deg. F. on the core and the outer part of the box. The fine grained plate was cast in a box with a temperature of 190 deg. F. on the outer part of the box, and the core at 65 deg. F. The metal in both plates was cast at 610 deg. F.

Hardness Values

The hardness values are as follows: Face of the fine grained plate, 21.2 Kg./sq. mm. Face of the coarse grained plate, 19.3 Kg./sq. mm. From this, we see that the face is 9.8% harder in the fine grained plate, and this increase in hardness could mean much more than 9.8% increased wear, also much more in the speed the plates could stand.

Examining the backs of the plates the following hardness values were obtained:

Back of the fine grained plate,—
20.0 Kg./sq. mm.

Back of the coarse grained plate,—
19.0 Kg./sq. mm.

From the above hardness values, it will be seen that the fine grained plate is not only harder on the printing surface, but also clear through to the back.

Comparison of Plates Cooled Differently

In the coarse grained plate, the tin-antimony crystals are larger, very unevenly distributed, and the tin is not well mixed with the rest of the alloy. The several black spots are air bubbles. It is interesting to note that there

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Made by the originator of domestic dry mats especially for newspaper production, Wood Dry Mats pick up the dark tones, the middle tones and the light tones, maintaining true tonal balance.

From coast to coast America's stereotypers have learned that they can depend upon Wood Mats . . . throwing the balance of favor in their direction because there *is* such a difference when Wood Dry Mats are used.

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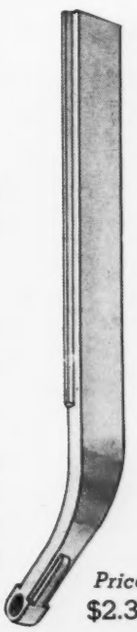
The purpose of the ledge is to make up for wear of the entire slug ejection mechanism.

The beveled pin will facilitate installation. Method of manufacture has been changed so as to insure greater accuracy in placement of the hole.



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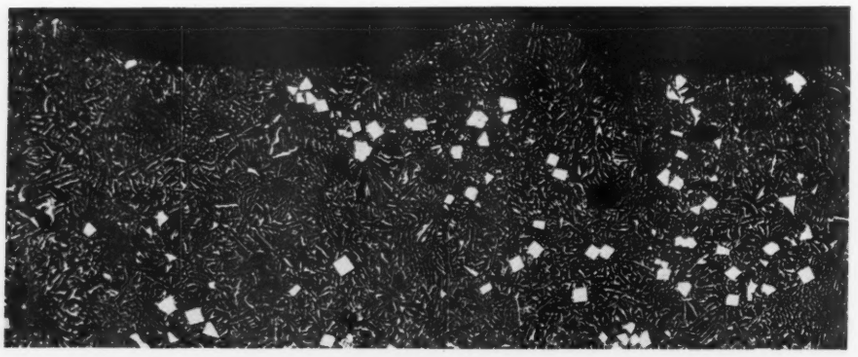
is *no antimony* in the halftone dot at the surface of the plate. This is the way the grain structure looks when the plate is cast in a hot box and not cooled rapidly enough. The same alloy, poured at the same temperature and rapidly cooled, is shown in the other photomicrograph. In the rapidly cooled plate, you will notice that the grain structure is much finer, the tin-antimony crystals are smaller and more evenly distributed, and there is plenty of antimony at the surface of the plate, where it is needed for hardness. At the back of the plate, the grain structure is extremely fine, and the mixture almost perfect. The reason for the difference in the back and the surface of the plate is caused by the fact that the core was as cold as it is possible to maintain it, while the outer part of the casting box was kept warm enough to prevent chilled plates, or metal shrinks in the face of the plate. This difference in temperature is what caused the extreme fine grain structure on the back of the plate, and the somewhat coarser structure at the surface, which was in contact with the hot mat and the warmer part of the casting box. Because of that, the printing surface cooled more slowly than the back, allowing more time for the tin-antimony crystals to segregate from the rest of the alloy. The rapidly cooled plate is stronger and harder both on the face and the back than the slowly cooled plate, due to the finer grain structure and more even distribution of the antimony.

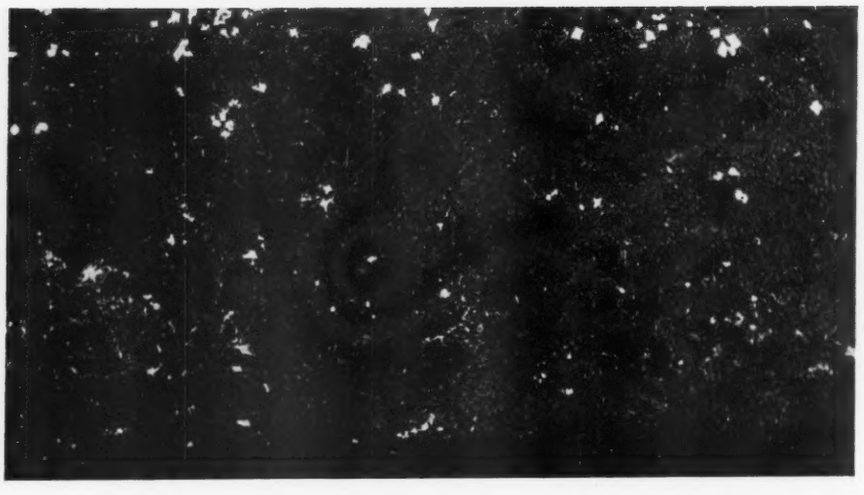
The face of the fine grained plate is 6% harder than the finer grained back of the same plate. This seems to be a contradiction of a general law of metallography which states that if a given alloy be cast under different conditions which result in different grain sizes, the casting having the finer grain will be the hardest and strongest. In this case, that law does not seem to apply, and it may seem strange that the face, having the coarser grain, is harder than the fine grained back. The explanation is that the difference in the temperature of the core and the outer part of the box probably allowed the antimony to separate out toward the face of the plate, and in this case, then, the extra hardness of the face is due to the fact that there is more antimony in the face than in the back. In the slowly cooled plate, there is no uniformity, either as to size or location, of the tin-antimony crystals.

Antimony Particles in Measured Sections

The laws of chance call for more antimony at the surface of the fine grained plate due to the greater number of particles in the rapidly cooled plate. Professor White has calculated from actual count of the number of antimony particles in measured sections that in the coarse grained plate there are 34,020,000 particles per cubic inch of metal. In the fine grained plate there are 124,251,000 particles of antimony per cubic inch. Thus we have 265% more antimony particles in the fine grained plate, and naturally would have more at the surface. By actual count, the antimony particles in the finer grained plate, at the surface, are from 430% to 590% greater in number than in the coarse grained plate.

Fig. 2—Cross-section views of stereotype plate, X100. The upper section of this figure represents the printing surface of the plate and shows two halftone dots. The lower section represents the inside of the plate (the surface which fits against the press cylinder).
In this section, note the absence of antimony at the surface of the halftone dots. These dots will wear rapidly on the press because they cast from lead and tin only.
No water was used to cool this plate. This photomicrograph shows the effects of the slowest possible rate of cooling on the grain structure. This plate was cast from the same metal as the plate shown in Fig. 1 a few minutes apart. Temperature of outer part of casting box, 190 deg. F. Temperature of casting box core, 190 deg. F. Stereo metal temperature, 610 deg. F.
Compare the lower section of this plate with the similar section in Fig. 1. Here you will see much larger antimony crystals.





Lester Yeager's work with stereotype metals in collaboration with Prof. H. Vance White, Department of Metallurgy and Metallography, at Virginia Polytechnic Institute, has created considerable interest.

Adapting Method to Local Conditions

It has been my contention for several years that proper cooling of the stereotype plate is highly important, and that more attention should be given to finding out exactly which method is best, then work out that method to the maximum degree of efficiency permitted by the local conditions that apply. It is one thing to work out the best method, and quite another to adapt it to local conditions and equipment in your plant.

The work that Professor White and myself have done on this problem seems to leave little doubt that better plates can be obtained by casting with the core as cold as possible, and the outer part of the casting box warm enough to prevent the mat from chilling or causing metal shrinks or chilled plates. That method can easily be applied to many types of casting equipment, while some equipment does not lend itself so easily, and there will be problems, more or less of a local nature, that will require individual attention.

Webendorfer Pension Fund

Webendorfer-Wills Co., Inc., manufacturers of printing machinery, Mt. Vernon, New York, has instituted a pension plan for employees (officials excepted) of the company. In order to give impetus to a successful establishment of the pension fund, $50,000 has been subscribed in the name of the company.

The books, forms and methods of accounting are to be administered entirely by two trustees and an advisory committee. In the control, management and distribution of the fund, the trustees are subject to and act only with the approval of the advisory committee. The advisory committee consists of five members, two of whom are appointed by the company's board of directors, two to be elected by participating employees and one member appointed by the company who shall be a participating employe.

Roughly explained, each employe participating in the pension fund pays 2% of his salary and the company pays yearly a sum at least equal to the contribution of each employe. Pension benefits commence at age 60. Suitable safeguards for employees, the fund and the company have been set up in a trust agreement. Sick and death benefits are included in the plan.

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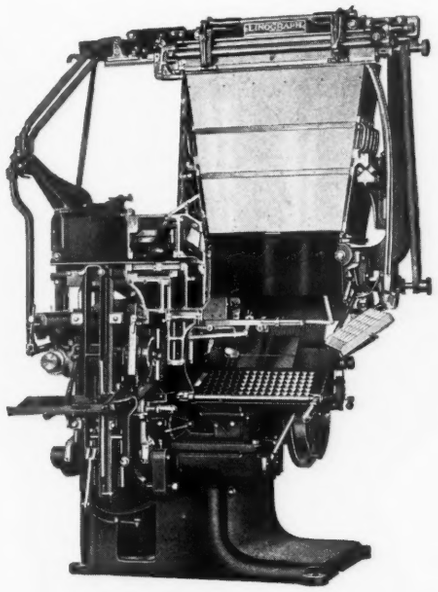

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Results of aggressive promotion and selling methods necessitates modern equipment installations over four-year period.

By STAFF WRITER

AN interesting example of modernization of printing plant equipment is that of the Copifyer Lithograph Corporation in Cleveland. This firm initiated its business career in October 1933. Since that time while it is true that the firm has experienced "growing pains" (its 1937 business was 50% greater than 1936 volume) officials of the company have held to the objective that modern equipment is a major means to business success. It is not meant that plant equipment modernization alone is responsible for the pronounced success of Copifyer Lithograph Corporation, but it is certain that aggressive production and selling methods plus modern equipment all in combination bring success. This firm's equipment modernization and expansion program has been carried out gradually as the business grew.

As is stated above, the firm started business in 1933. Principally, the equipment consisted of one old camera without a screen, one vacuum plate holder and a 19-year-old 28 x 42 press. Six employees constituted the personnel. Floor space leased for offices and plant equipment consisted of 3800 sq. ft. Today, the floor space occupied is six times greater or approximately 22,800 sq. ft. Today, eighty-eight employees are on the Copifyer payroll.

Allen H. Frost is president; Werner W. Schaumann is vice president, and Frank A. Myers is secretary-treasurer of the company. Paul Pluess is general superintendent.

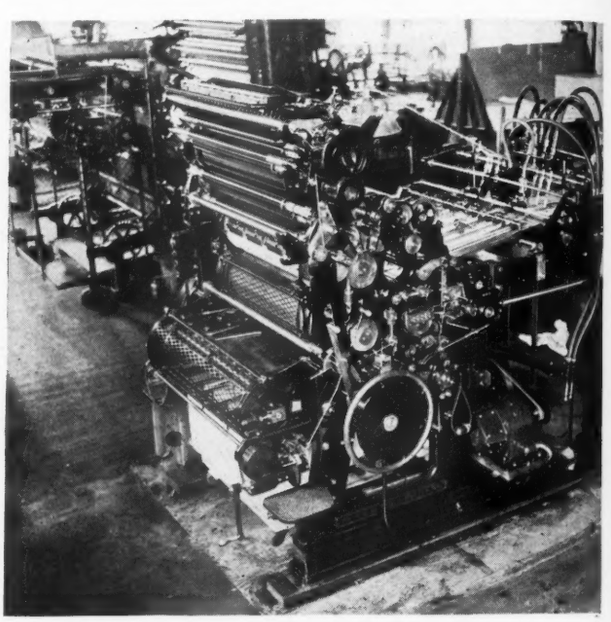
The firm executes commercial lithographic printing such as sales manuals, direct mail pieces, posters and displays. Orders for all sizes of work from small leaflets to blow-ups and posters in black and white, flat color or four-color process are now produced by reason of installation of suitable equipment from time to time.

There's plenty of light and means to direct it just where it is needed most in the bindery of Copifyer Lithograph Corporation, Cleveland. The large glassteel diffusers are suspended on Bullidog Trol-e-duct which permits moving lamps without additional wiring or moving the equipment.

When the company started, black and white work only was executed. Equipment has been installed so that four-color process and all flat-color plate work is executed and printed in the plant.

New Equipment Installed

During the second year of its business, an additional single-color press was added. In the third year, a two-color press and two single-color presses were added to the pressroom equipment. This year a new small Harris single-color press has been installed and a new Harris two-color press will be installed in September so that the press equipment will consist of three single-color and two two-color units.



View of Harris single-color offset press installed in plant of Copifyer Lithograph Corporation, Cleveland. An additional new Harris two-color press will be installed in September.

In 1936, the volume of business had grown to such an extent that bindery equipment was installed. Here will be found three Cleveland folding machines, a Rosback four-station gathering and stitching machine and a power paper drill—all new equipment.

In 1937, the two-camera equipment was supplemented by a large Rutherford darkroom camera for process color work. A Rutherford step and repeat machine with a Gelb lamp was also installed.

In the plate-making department, dual equipment has been installed, *i.e.*, all equipment is duplicated. There are two vacuum printing frames, one of which is of Pitman make, with Macbeth arc lamps and two plate-

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Vulcan NON-FELT Press Blankets

This increasingly popular member of the Vulcan press blanket family is a moderately hard top blanket. It is not as hard as it was in the past, when it needed special plates and special handling, because it has now been modified by the introduction of cork beneath the top fabric. The oil-proof coating has of course been retained—with an improvement in that it is now burnished to a glass-like smoothness. This Vulcan Blanket, No. 67, is now suitable for the average pressroom and average plates. It will produce an all-'round better print than most felt blankets—particularly pictures, solids, and small type. Write for more information.

Or if you prefer . . .

A FELT BLANKET. Two types are available—regular and No. 73. The latter has a highly polished surface which is conducive to better coverage on solids.

OR A DRAW SHEET COMBINATION. Vulcan Draw Sheets, too, can be furnished either plain or with polished surface. Suggested ideal draw sheet combination: Start with No. 62 Underpacking, which is a rubber-like Vulcan product—then Vulcan's No. 76 Cork Underpacking—and, finally, a Vulcan Draw Sheet. For best results, always use Vulcan Underpackings with Vulcan Draw Sheets and other top blankets.

VULCAN PROOFING COMPANY
FIRST AVENUE AND 58th STREET, BROOKLYN, N.Y.

Vulcan
PRESS BLANKETS

The Editor Asked for New Type Faces

HE had been long aware that the paper lacked something in appearance. But even with a complete new dress of late body and headline faces, he confessed disappointment.

But he had stirred up a spirit of mechanical improvement and when the stereo foreman made the long-postponed change to Certified Mats, it was evident that the problem had been solved.

For dependable stereotyping, rely on Certified Mats, made in the U. S. A.

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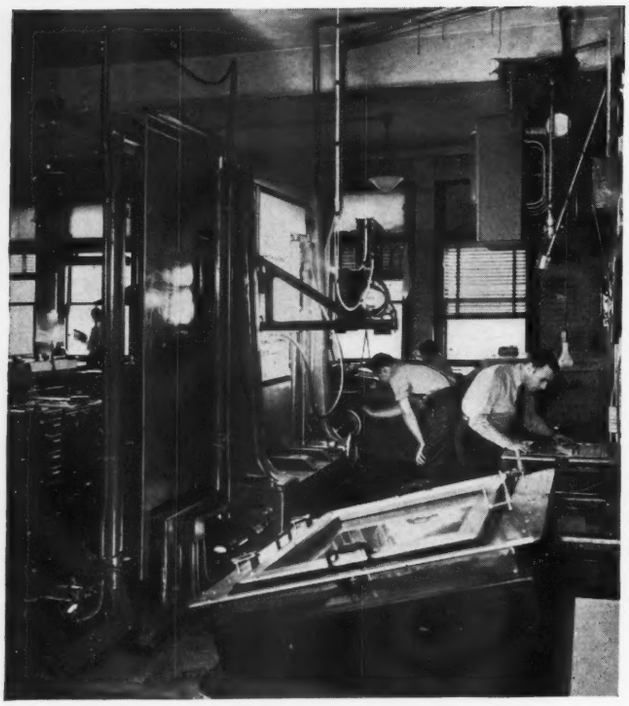


New Rutherford Step and Repeat Machine in plant of Copifyer Lithograph Corporation, Cleveland.

coating machines. The latest is a Monotype-Huebner vertical plate coating machine. Over the deep-etch developing table is suspended a canopy attached to an exhaust fan for drawing off fumes.

A Craftsman Line-up and Register Table has been installed in the layout department to supplement the regular equipment.

Type Reproduction

A complete copy preparing department is operated. For typewritten copy, a Varityper and a battery of Standard machines is used. For typeset matter, an assortment of type and two Chandler & Price platen presses are used. Much of the typographic work, however, is executed by trade composition houses in Cleveland.

Heating Facilities

In case of overtime or night operation the heating problem has been solved by installing special equipment consisting of six Bryant gas hot air heaters suspended from the ceiling in different locations. Two Bryant humidifier units operate automatically from September to May to build up humidity in the plate-making department, bindery and pressroom.

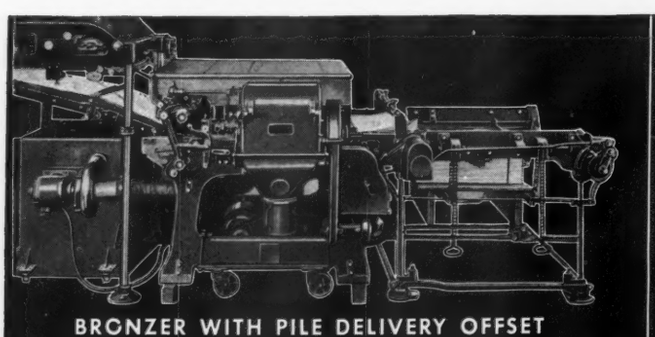
Paper Purchases

Chart records obtained over a period of years from a Taylor recording wet and dry bulb thermometer are kept on file. Mr. Frost states that by consulting the charts for average temperature and humidity conditions, they are enabled to determine what moisture content to specify in paper purchases for 30, 60 or 90-day periods. By specifying and having in stock paper of the proper moisture content, the problems of paper stretch have been practically eliminated.

Lighting Facilities

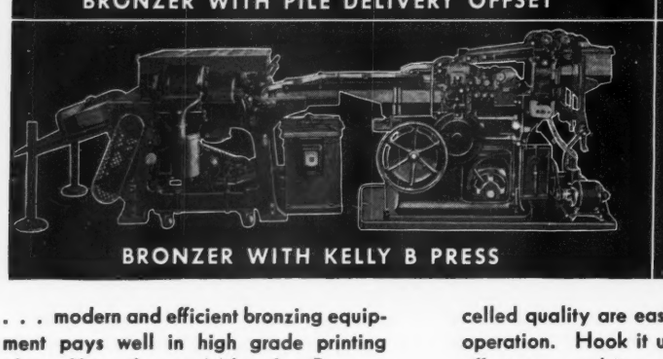
Particular attention is paid to providing suitable lighting equipment. At the time the Illuminating Engineering Society issued its now famous bulletin on printing

IT WILL PAY YOU TO INVESTIGATE.... **THE NEW MILWAUKEE BRONZER**



BRONZER WITH PILE DELIVERY OFFSET

BRONZER WITH LOW POINT OFFSET DELIVERY



BRONZER WITH KELLY B PRESS

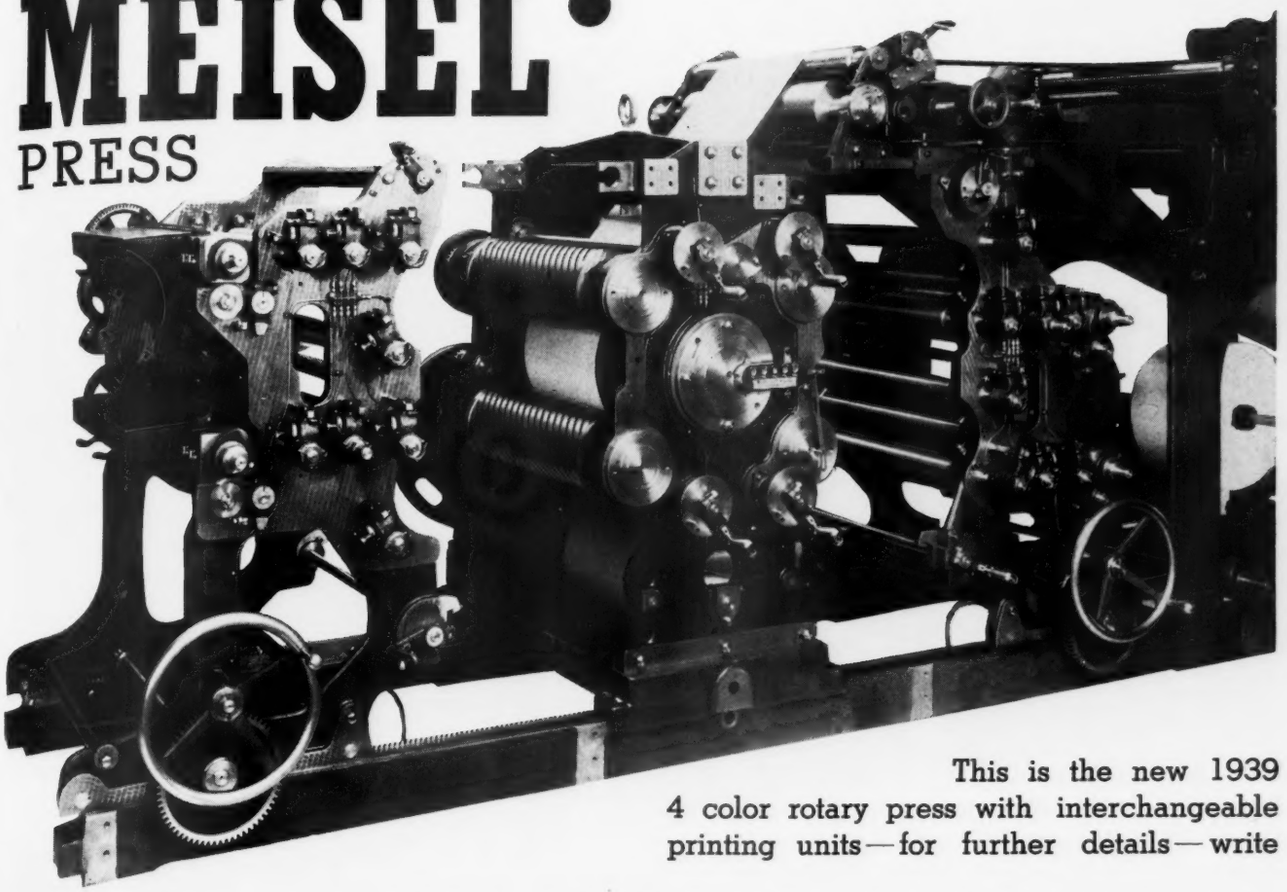
BRONZER WITH MIEHLE PRESS

. . . modern and efficient bronzing equipment pays well in high grade printing plants. Using the new Milwaukee Bronzer, clean, solidly covered, highly lustrous metallic bronze impressions of an unexcelled quality are easily delivered in one operation. Hook it up with any letter or offset press and its continuous speed conforms to the speed of the press. It is simple, portable and versatile. It gives clean work and reclaims all old bronze. This machine is a printer's "gold mine." Investigate it! Write now for further details and prices, listing maximum sheet size and presses. Ask about the 30-day trial period.

C. B. HENSCHEL MANUFACTURING COMPANY
WEST MINERAL AND SOUTH THIRD STREETS • MILWAUKEE, WISCONSIN

A NEW 1939

MEISEL PRESS



This is the new 1939 4 color rotary press with interchangeable printing units—for further details—write

MEISEL PRESS MANUFACTURING CO.

944 Dorchester Ave. Boston, Mass.

plant illumination, executives of the Copifyer Lithograph Corporation studied the recommendations as they applied to the needs of this plant. When the report was first issued, some of the lighting fixtures were not available. However, lighting fixtures were purchased and installed and others were made with local assistance.

For color matching, a Macbeth color matching lamp is in use. Through an electric foot switch, north sky light or late afternoon light are obtainable from this unit for the purpose of checking ink matches.

Above each of the presses are mounted two Benjamin spot lamps with 8 in. lenses. The lamps are mounted in such a way as to throw the light beams toward the center of the press where the illumination is 30 foot candles and approximately 25 foot candles at the outside edges of the presses.

Over each press table is a large flood light which gives an even flood of light free from glare. This unit provides 30 foot candles over the entire o.k. sheet and the check sheets while the run is in progress.

In the bindery, large glassteel diffuser lamps are suspended from the ceiling on Bulldog Trol-e-duct. The Trol-e-duct permits moving the lamps when desired without additional wiring to accommodate changes in floor layout (as shown in one of the accompanying illustrations). The art department, cutting and shipping departments are provided with similar lamps. An Industrial Recording Company electric counter is attached to each folding machine to get accurate shipping count.

Mackey Plan Well Received

"The plan for the solution of the outmoded-typesetting-machinery problem worked out by Joseph T. Mackey, president of the Mergenthaler Linotype Company, is being enthusiastically received in the printing and publishing industry."

So runs the leading story in the latest issue of The Linotype News. "Already," the story continues, "printers and publishers in all sections of the country have written in commending the purpose of the plan. Many inquiries have been received, and credit memoranda transactions already have been completed."

1939 A.N.P.A. Mechanical Conference

The next A.N.P.A. Mechanical Conference will be held at Hotel Benjamin Franklin in Philadelphia, according to a recent announcement. The conference days are June 5, 6 and 7, 1939.

Patents

Recently Granted By U. S. Patent Office

Bookbinding:

2,121,505. BOOKBINDING. Harvey B. Martling, Nashville, Tenn. Application April 15, 1937, Serial No. 137,137. 9 Claims. (Cl. 281—21.)

1. In a book, the combination of a back; covers operatively connected to the back; a stack of leaves including outside leaves and intermediate leaves formed with registering openings adjacent their inner edges; a reinforcing strip connected to one of the outside sheets adjacent its inner edge and connected to the inside inner edge of the adjacent cover, the strip having a hinged portion between its connections to the outside leaf and the cover, and the strip being formed with spaced openings on opposite sides of the hinged portion respectively and aligned with the openings in the leaves; and attaching means passing through the openings in the leaves and in the reinforcing strip and being secured to the back.

2,123,625. BINDING DEVICE. Charles E. Emmer, Chicago, Ill., assignor to Cercla, Inc., Chicago, Ill., a corporation of Illinois. Application September 23, 1935, Serial No. 41,679. 4 Claims. (Cl. 281—25.)

1. A book of perforated sheets having a binding comprising a strip of sheet metal having arms extending from one longitudinal edge portion thereof and of ring-like form extending through the perforations of the sheets, one end of each arm being integral with the longitudinal edge and the other ends of the arms being directed outwardly from the respective ring-like portions and contacting a surface of the strip, the strip being of a width greater than the length of the outwardly directed ends and having the other longitudinal edge portion thereof folded over into close contact with the ends to secure the ends between the portions of the strip to retain the rings in fully closed relation.

Composing Machines:

2,121,048. LINE CASTING AND COMPOSING MACHINE. Louis M. Potts, Evanston, Ill., assignor, by mesne assignments, to Teletypesetter Corporation, a corporation of Delaware. Original application January 2, 1932, Serial No. 584,287. Divided and this application April 21, 1934, Serial No. 721,657. 38 Claims. (Cl. 199—20.)

1. A composing machine including a plurality of magazines each having a set of matrix storage channels, a system of matrix release elements capable of association with the channels of any one of the magazines, and means automatically responsive to stored signals for effecting relative movement between the magazines and the system of release elements.

2,121,975. SLUG CASTING MACHINE. Richard R. Mead, Queens Village, N. Y., assignor to Mergenthaler Linotype Company, a corporation of New York. Application July 9, 1936, Serial No. 89,740. 14 Claims. (Cl. 199—49.)

1. A line stop for the first elevator or line transporter of a typographical machine comprising spaced slide bars, and a friction creating member fixedly secured to one of the bars.

2,123,200. LINE CASTING AND COMPOSING MACHINE. Louis M. Potts, Evanston, Ill., assignor by mesne assignments, to Teletypesetter Corporation, a corporation of Delaware. Original application January 2, 1932, Serial No. 584,387, now Patent No. 2,057,652, dated October 13, 1936. Divided and this application May 5, 1934, Serial No. 724,025. 24 Claims. (Cl. 199—24.)

1. A line-casting machine including a composing mechanism having a magazine affording a plurality of channels each adapted to contain a number of matrices having different character intaglios individual thereto, each character class appurtenant to an individual one of the channels with certain character classes appurtenant to two channels located indiscriminately in the magazine, an automatic control mechanism including means for individually releasing matrices from their channels, and means operative for releasing the same character matrices from alternate channels during successive cycles of operation.

Patent Papers

Printed copies of patents are furnished by the United States Patent Office at 10 cents each. Address the Commissioner of Patents, Washington, D. C. and enclose 10 cents for each patent paper wanted.

2,123,271. SAFETY DEVICE FOR TYPOGRAPHICAL COMPOSING MACHINES. Robert M. Berry, Sr., Uniontown, Pa. Application October 21, 1937, Serial No. 170,174. 3 Claims. (Cl. 199—52.)

1. In a typographical composing machine having a mold selector and an elevator, a member arranged to be operated by the forward movement of the mold selector and arranged to be interposed by the movement in the path of the moving elevator to stop the latter, the member being manually retractable to permit the resumption of the machine's operation.

2,123,557. TYPOGRAPHICAL SLUG CASTING MACHINE. Christian Augustus Albrecht, Berlin, Germany, assignor to Mergenthaler Linotype Company, Brooklyn, N. Y., a company of New York. Application November 30, 1936, Serial No. 113,382. In Germany June 27, 1936. 3 Claims. (Cl. 199—59.)

1. A slug trimming mechanism for typographical slug casting machines comprising a right hand knife, a spring urged left hand knife, stops limiting the extreme operative position of the left hand knife, springs holding the left hand knife yieldingly against the stops, and an adjustable fore-and-aft slide formed at its rear end with an inclined surface engaging with a part of the left hand knife, the inclined surface being operative by the rearward adjustment of the slide to withdraw the left hand knife left-ward away from the limiting stops against the action of the springs.

2,123,822. SLUG CASTING MACHINE. Richard R. Mead, Queens Village, N. Y., assignor to Mergenthaler Linotype Company, a corporation of New York. Application September 30, 1936, Serial No. 103,304. 11 Claims. (Cl. 199—48.)

1. In a slug-casting machine, the combination of a rotatable mold disk equipped with a plurality of molds, driving means therefor including a shiftable element to make and break the driving connection, the mold disk being adjustable manually when the driving connection is broken to locate any selected one of the molds in operative position, and an automatic safety device forming no part of the driving connection and cooperating with but distinct from the shiftable element and serving to prevent the making of the driving connection whenever the manual adjustment of the mold disk is such that no mold is located in operative position.

Feeding, Folding, Delivery:

2,121,327. DELIVERY MECHANISM FOR USE WITH PRINTING MACHINES. Cecil George Quick, Donald Arthur Ball, and William Arnold Whitehead, London, England, assignors to R. Hoe & Co., Inc., New York, N. Y., a corporation of New York. Application January 3, 1935, Serial No. 222. In Great Britain January 6, 1934. 15 Claims. (Cl. 93—93.)

1. In delivery mechanism for use with means for feeding a succession or stream of products passing from a printing machine, the combination of two flies each comprising a hub member and a blade, means rotatably positioning the flies about the feeding zone, means rotating the flies in opposite directions, the positioning of the flies being such that the blade of one fly follows a path intersecting about the feeding zone the path followed by the other fly, and the two flies being set in such an out of phase relationship that the flies operate to take alternate products, and an arm secured to each hub member of one fly and co-operating with the blade secured to the other hub member of the other fly to steady a product carried by the first fly.

2,122,796. CONTROLLING DEVICE FOR PRINTING MACHINES. Albert J. Horton, White Plains, N. Y., assignor to R. Hoe & Co., Inc., New York, N. Y., a corporation of New York. Application August 10, 1935, Serial No. 35,592. 24 Claims. (Cl. 164—68.)

1. In a control device for a printing machine having a rotary folding cylinder, a light responsive electrical device positioned and arranged to detect the presence of a product on the folding cylinder at an improper time, and control means actuated by the device, when this occurs, to stop the machine.

2,123,673. WEB ROLL SUPPLY MECHANISM. Raymond A. Freeman, Mount Vernon, N. Y., assignor to R. Hoe & Co., Inc., New York, N. Y., a corporation of New York. Application December 5, 1935, Serial No. 52,945. 15 Claims. (Cl. 242—58.)

10. In a machine adapted to operate upon a plurality of webs to form a folded multiple page product, means to join the web of a replacement roll to one of the webs, an indicating element applied to and extending from an edge of any one of the other webs whereby it will extend beyond an outer edge of the folded product, and means to apply the element to the web when the aforesaid web join is made.

Miscellaneous:

2,121,021. METHOD OF PRINTING AND ARTICLE RESULTING THEREFROM. Ralph T. K. Cornwell, Fredericksburg, Va., assignor to Sylvania Industrial Corporation, Fredericksburg, Va., a corporation of Virginia. Application August 23, 1935, Serial No. 37,526. 8 Claims. (Cl. 8—5.)

1. A process for producing an indicium on a pellicle of a hydrophilic colloid, comprising impregnating such a colloid with an organic water-miscible dyestuff solvent which is a swelling agent for the colloid and printing the impregnated colloid in gel state with an ink containing a substantive dyestuff soluble in the solvent.

2,123,013. PRINTING APPARATUS. Harry L. Latz, New York, N. Y., assignor to Harry Latz Service, Inc., New York, N. Y., a corporation of New York. Application July 2, 1937, Serial No. 151,574. 20 Claims. (Cl. 101—57.)

1. In a printing machine, a support for a plurality of slugs provided with type items to be printed, printing mechanism including a printing member normally in receiving relation to the support, a transfer device for transferring successive slugs from the support to the printing member, mechanism for operating the device, and a connection between the mechanism and device adapted to be automatically broken upon the development of abnormal resistance to the operation of the transfer device.

Plate Making:

2,122,142. METHOD OF AND MEANS FOR FORMING PRINTING PLATES. William F. Huck, Richmond Hill, N. Y., assignor, by mesne assignments, to R. Hoe & Co., Inc., New York, N. Y., a corporation of New York. Application June 19, 1935, Serial No. 27,329. 10 Claims. (Cl. 153—48.)

2. In a forming press for a pre-curved printing plate having two straight edges and two curved edges, a concaved press member, the radius of the curvature of which is greater than the radius of the plate, adapted to receive the plate, means to clamp the plate against the concaved member along a line substantially midway between the straight edges of the plate, and a convexed press member, the radius of the curvature of which is greater than the radius of the plate, adapted to then engage and spread the side edges of the plate apart and then force the plate into conformity with the concaved member.

2,122,143. PLATE SHAVING MACHINE. William F. Huck, Richmond Hill, N. Y., assignor to R. Hoe & Co., Inc., New York, N. Y., a corporation of New York. Application December 11, 1936, Serial No. 115,309. 19 Claims. (Cl. 90—25.)

1. In a plate shaving machine, a reciprocable plate holding table, a plate cutting member, a plate hold down device, the cutting member and the hold down device being mounted for movement into and out of engagement with a plate on the table, separate electrically operated means to operate the table, the cutting member, and the hold down device, and a common operation starting means for all of the operating means.

2,122,198. APPARATUS FOR CONDITIONING ENGRAVING PLATES. Fletcher R. Edes and Frank M. Martin, Plymouth, Mass. Application March 25, 1936, Serial No. 70,897. 1 Claim. (Cl. 266—2.)

Apparatus for conditioning zinc base engraving plates and like compositions having a relatively low elastic limit, which comprises a rigidly supported base having a supporting surface shaped to provide a close thermal contact with one of the faces of the plate under treatment, a platen cooperating with the base and capable of exerting a pressure of at least 40 pounds per square foot thereon, means for maintaining the upper surface of the base and the lower surface of the platen at a predetermined temperature, guiding means for supporting the platen for movement toward and away from the base, upstanding supports carried by the guiding means and vertically movable so as to engage the platen, retractable means normally operative to maintain the supports in an elevated position wherein the platen is held above the base, and means operative to retract the retractable means and the supports associated therewith so that the platen may descend by gravity upon the base, whereby to subject the plate to the simultaneous effect of its weight and the heat dissipating action of the contacting surfaces of the base and platen.

2,122,404. PROCESS OF MAKING LITHOGRAPHIC REPRODUCTIONS. Fred Harvey Bloom, Fort Belvoir, Va. No Drawing. Application June 18, 1936, Serial No. 85,929. 14 Claims. (Cl. 95-5.4). (Granted under the act of March 3, 1883, as amended April 30, 1928; 370 O. G. 757.)

8. A light sensitive element comprising a substantially gelatin-free egg-albumin, treated in the presence of hea with a light desensitizing dye and containing a chromatist ing agent and which after exposure to light and without further treatment other than inking, washing and clearing, will produce clear and evenly colored prints at high speed and over an extended press run.

2,122,800. MATRIX DRYING MACHINE. Frederick Grafton Lougee, London, England, assignor to R. Hoe & Co., Inc., New York, N. Y., a corporation of New York. Application December 21, 1935, Serial No. 55,634. In Great Britain December 22, 1934. 8 Claims. (Cl. 34—16.)

6. In a matrix drying machine, a pair of members having recesses in their opposed surfaces, a plate in the recess in each member, the plates having grooves formed in their opposing surfaces, means to move one member toward the other to clamp a matrix between the plates and to form a closed chamber at one end of the members

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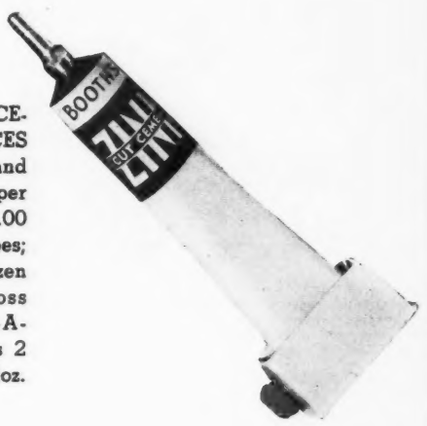
Try it. No waste—no muss—holds with the grip of a tiger's paw.



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If you are not among the many, many contented users of Booth's Green Rubber Keyboard Rolls for Intertypes and Linotypes, send for a sample pair at $1.30 (price for U. S. and Canada). Machinists like them because of their constant qualities. The rolls you order a year from now will be round from end to end, they will be as resilient and will grip the roll shaft as snugly as the trial pair which we want to send you *now*.

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by the registering of the recesses in the opposed surfaces thereof, the grooves in the plates being in connection with the chamber, and means to exhaust the chamber to draw vapor from each side of the matrix into the grooves of the plate adjacent thereto.

2,122,859. PROCESS FOR MAKING PLATES FOR COLOR PRINTING. Everett R. Eaton, Darien, Conn., assignor to McCall Corporation, New York, N. Y., a corporation of Delaware. Application January 9, 1937, Serial No. 119,736. 4 Claims. (Cl. 95—5.1.)

1. A process of photographically forming a negative for a halftone printing plate for multi-color printing from a colored original which comprises forming a number of masks each comprising a transparent sheet having at least one black opaque area, the black opaque area of each mask being different in outline and position from the black opaque area of the other masks to block out all areas of the original of a selected hue, exposing a light sensitive element in a camera first to the original through a combination of more than one of the masks superimposed in register to block out the combined opaqued areas of the combination of masks covering all areas of the original containing the color value of the plate to be made and then exposing the light sensitive element to the original without the masks through a halftone screen in normal position to obtain a halftone negative of a selected color value.

2,123,276. METHOD OF MAKING RULED SCREENS. Herman Eckerlin, Frankfort-on-the-Main, Germany. Application December 12, 1936, Serial No. 115,585. In Germany January 2, 1936. 1 Claim. (Cl. 95—81.)

A method of producing original ruled-screens suitable for photochemical and photomechanical reproduction purposes comprising covering a transparent plate with an opaque coating of lead sulphide, covering the coating with a second coating resistant to lead-sulphide solvents, positioning the coated plate in a ruling machine, applying the diamond point of the ruling machine to the coatings to cut rulings simultaneously through the coatings, applying a lead-sulphide solvent to the ruled plate to etch out of the rulings the lead-sulphide residues that are left in the transparent rulings after the diamond-point cutting operation, and removing the second coating.

Printing Presses:

2,118,517. DAMPENING MECHANISM FOR PRINTING PRESSES. Arthur B. Mitchell, La Grange, Ill., assignor to Miehle Printing Press & Manufacturing Company, Chicago, Ill., a corporation of Illinois. Application May 22, 1936, Serial No. 81,224. 13 Claims. (Cl. 101—148.)

1. In a dampening device, a distributing roller, a liquid reservoir, and a moisture absorbing medium in the form of an endless cloth band having spaced end loop portions, the band having operation to transfer the liquid from the reservoir to the roller.

2,119,539. PRINTING MECHANISM. Morris J. Hoffman, Chicago, Ill. Application December 5, 1936, Serial No. 114,419. 12 Claims. (Cl. 101—93.)

1. In printing mechanism, the combination of a base, type bars arranged side by side in groups and slidably mounted in the base, means to actuate the type bars whereby to set selected ones in printing position, auxiliary printing means comprising a guide member supported above the type bars in close proximity thereto, and a slide having type faces thereon and slidably held on the guide member, and impression making means co-operating with the type bars and auxiliary printing means to make impresssion.

2,119,747. PRINTING PRESS INKING MECHANISM. James Edgar Lee and Freeman Barney, Grand Haven Mich., assignors to The Challenge Machinery Company, Grand Haven, Mich., a corporation of Michigan. Application December 28, 1936, Serial No. 117,910. 10 Claims. (Cl. 101—358.)

1. In a printing press, a horizontal support, a bed mounted for back and forth longitudinal movement over the support, vertical supporting members, one at each side of the horizontal support connected thereto at their lower ends and extending above the bed, a horizontal cylinder rotatably mounted on and carried between the supporting members, a gear on one end of the cylinder, a rack at one side of the bed in mesh with the gear, brackets connected to the members, a rock shaft extending between the brackets connected to the members, a rock shaft extending between the brackets, an inking mechanism suspended from the rock shaft including two spaced inking rollers and a spreading roller above and between the inking rollers adapted to frictionally engage therewith, gearing between the spreading roller and the gear on the cylinder, and a pivotally mounted manually operable lever carried by the inking mechanism and having means adapted when the lever is turned in one direction to engage against a supporting member and swing the inking mechanism in an upward direction about the axis of the rock shaft.

2,120,532. DELIVERY MECHANISM OF PLATEN PRINTING PRESSES. Frank Sydney Thompson Manchester, England, assignor to T. C. Thompson & Son, Limited, Manchester, England. Application April 30, 1937, Serial No. 139,935. In Great Britain May 31, 1935. 3 Claims. (Cl. 271—84.)

1. In a delivery mechanism for a platen printing press, the combination comprising a fixed guide, a gripper device slidably mounted on the fixed guide and means for reciprocating the gripper device including a toggle comprising a member rotatably mounted about a fixed axis positioned intermediate the ends of the fixed guide, another member pivotally connected to the gripper device and to the first mentioned toggle member, the second mentioned toggle member having an extension thereon extending beyond the point of connection with the first mentioned toggle member, and a second fixed guide positioned intermediate the extreme positions of movement of the gripper device and cooperating with the extension of the second mentioned toggle member, whereby the toggle is extended on each side of the fixed axis of oscillation of the first mentioned toggle member.

2,120,714. PRINTING OR OTHER MACHINE. Walter C. Scott, Plainfield, N. J. Application June 11, 1936, Serial No. 84,678. 20 Claims. (Cl. 270—5.)

1. The method of obtaining a desired speed relationship of a plurality of separately driven devices greater than two which consists in independently but simultaneously controlling the speed of a plurality of such devices with respect to the speed of a single device without affecting the speed of the single device by the speed of the plurality of devices.

15. The combination with a plurality of operating units greater than two, of a motor for each unit, and means to control, by the speed of the motor of one unit, the speed of the motors of the remaining units without controlling the speed of the motor of the one unit by the speed of the motors of the remaining units.

2,120,845. INK FOUNTAIN. Henry A. Wise Wood, New York, N. Y., assignor to Wood Newspaper Machinery Corporation, New York, N. Y., a corporation of Virginia. Appication August 4, 1932, Serial No. 627,438. Renewed May 28, 1937. 3 Claims. (Cl. 101—350.)

1. In a printing press, the combination with a plate cylinder and a series of rolls for transferring ink thereto, of a plurality of fountain bowls arranged end to end, a fountain roll in each bowl for supplying ink to the ink rolls, the fountain roll being less than full page width of the press, and quickly detachable means projecting to an accessible point in front of the bowl whereby each fountain bowl is independently detachable and removable.

2,120,978. INKING MECHANISM FOR PRINTING MACHINES. William F. Huck, Richmond Hill, N. Y., assignor, by mesne assignments, to R. Hoe & Co., Inc., New York, N. Y., a corporation of New York. Application June 27, 1935, Serial No. 28,602. 6 Claims. (Cl. 101—350.)

1. In combination with a pair of driven rollers, one being driven at a speed faster than the other, a freely rotatable roller swingable into contact with the others, a pulley-like member, substantially inverted V shaped in cross section at its periphery, secured to each of the driven rollers, and a pair of separable members coinciding to form a substantially V shaped groove therebetween and secured to the freely rotatable roller, the members and the pulley-like member being engageable with the inverted V shaped portion of one in between and separating the members forming the V shaped groove of the other.

2,121,195. PRINTING PRESS. Charles W. Harrold, Shaker Heights, and Clyde G. Horton, Bedford, Ohio, assignors to Harris-Seybold-Potter Company, Cleveland, Ohio, a corporation of Delaware. Application December 10, 1934, Serial No. 756,794. 23 Claims. (Cl. 101—247.)

22. In a machine a frame, elongate normally stationary means carried by the frame, a printing cylinder within the frame supported by and mounted to rotate around the means, and a pair of anti-friction bearings interposed between the cylinder and the means, the means comprising the following elements, namely, a shaft extending through the cylinder and longitudinally removable therefrom, a sleeve within the cylinder and surrounding the shaft of such length as to be removable transversely from the frame while remaining in the cylinder, the sleeve having a portion against which the inner race of one of the bearings abuts, means for holding the inner race against the sleeve portion, and means effective to prevent lateral movement of the sleeve relative to the shaft.

2,121,308. PRINTING PRESS. Bruce Wale, San Francisco, Calif., assignor to Standard Process Corporation, Chicago, Ill., a corporation of Delaware. Application May 22, 1934, Serial No. 726,875. 26 Claims. (Cl. 101—232.)

7. In a rotary printing-press, the combination of a printing roller having a printing area occupying a portion of the circumferential area of the roller and a non-printing area occupying another portion of the circumferential area of the roller, an impression roller adapted in cooperation with the printing area of the printing roller to advance material through the pass between the rollers and adapted to cease the advance when the non-printing area of the printing roller comes into play, a clamp for selectively halting material to be printed, and means associated with one of the rollers for rendering the clamp effective during the interval of advance of the non-printing area of the printing roller through the pass.

2,121,309. ROTARY PRINTING PRESS. Bruce Wale, San Francisco, Calif., assignor to Standard Process Corporation, Chicago, Ill., a corporation of Delaware. Application March 28, 1935, Serial No. 13,461. 7 Claims. (Cl. 101—378.)

1. A printing element adapted to print directly upon sheet material irrespective of the nature of the subject matter to be printed and irrespective of the relation in area or location of the printing portions to the non-printing portions comprising a rigid carrier having a smooth curved surface and a thin flexible sheet metal relief printing plate drawn taut upon the surface of the carrier by means of uniform tension applied to the plate, the plate having an outer face comprising printing and non-printing portions, the latter having a uniform depth of relief with respect to the printing portions, the relative thickness of the printing and non-printing portions being so proportioned as to render the plate freely flexible in the thicker or printing portions while at the same time maintaining high tensile strength in the thinner or non-printing portions and the tension being sufficient to shape both printing and non-printing portions of the plate to conform accurately to the curvature of the carrier surface.

2,121,932. ROTARY PRESS. Herbert H. Slocum, Seattle, Wash., assignor of one-half to John W. Strofold, Seattle, Wash. Application April 13, 1936, Serial No. 74,182. 3 Claims. (Cl. 100—47.)

1. In a rotary press, a housing, a drum rotatably mounted in the housing, a hopper extending into the housing over the drum, a discharge spout passing loosely through an opening formed in the housing at one side of the drum and hopper, a grating extending spirally about the drum and together therewith defining a chamber gradually decreasing in dimensions from the hopper to the outlet spout, the grating having sections slidably and pivotally connected with each other at their ends, a yieldable support engaging the connected ends of the grating sections and urging the grating towards the drum, the discharge spout having its inner end pivoted to the adjoining end of the grating, a yoke pivoted to the housing externally thereof and pivotally connected with the discharge spout in straddling relation thereto and serving to mount the spout for longitudinal movement into and out of the housing, a helical spring having one end abutting the yoke and yieldably resisting movement of the yoke away from the housing in a direction to move the discharge spout outwardly and resisting movement of the last-mentioned end of the grating away from the drum, a mounting for the other end of the spring, a shaft rotatably mounted and threaded through the mounting to adjustably support the same and regulate tension of the spring, means carried by the drum for passing material through the chamber between the drum and grating as the drum rotates whereby pressure exerted by the grating will extract fluid from the material, and means between the hopper and the spout for directing compressed material into the spout as it leaves the chamber between the drum and grating.

2,122,128. PRINTING PRESS. Edwin E. Burroughs, Hamilton Beach, Long Island, N. Y., assignor to Potdevin Machine Company, Brooklyn, N. Y., a corporation of New York. Application April 15, 1936, Serial No. 74,460. 9 Claims. (Cl. 101—181.)

1. In a printing press the combination of printing mechanism and inking mechanism movable into and out of contact with each other, a latch comprising a plate carried by one of the mechanisms and having a slotted end communicating with a circular bore therein, a transverse rotatable rod carried by the other of the mechanisms and having a flattened portion adapted to enter the circular bore through the slot, and an eccentric bearing for the rod, the bearing being rotatable to latch the mechanisms in operating contact with each other.

2,123,476. INKING APPARATUS. Alfred Schlesinger, Aldwych, London, England. Application October 2, 1936, Serial No. 103,637. 14 Claims. (Cl. 101—350.)

1. An inking apparatus including, in combination, a series of rollers for transmitting ink from the ink-fountain roller to the printing-form inking rollers of a rotary cylinder printing machine, the series including two sets of ink-rubbing rollers supported for unitary movement into and out of an ink-receiving and an ink transfer position, one set of rollers rubbing a charge of ink as a charge of rubbed ink is transferred from the other set, and vice versa, means for rotating the rollers of the sets, and means for effecting the unitary movement of the sets at intervals of greater duration than the time required for one rotation of the printing cylinder.

2,123,516. PLATEN PRINTING PRESS. Frank Sydney Thompson, Manchester, England, assignor to T. C. Thompson & Son, Limited, Manchester, England. Application April 30, 1937, Serial No. 139,934. In Great Britain May 31, 1935. 4 Claims. (Cl. 101—287.)

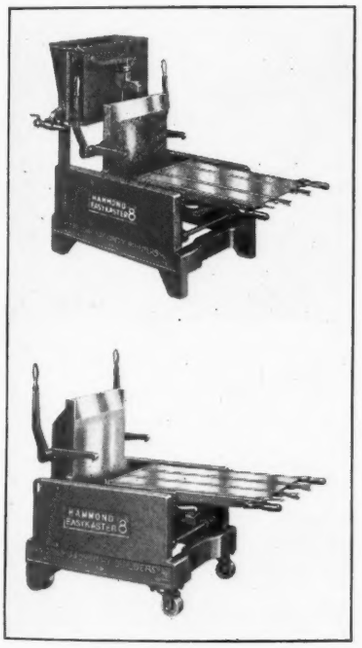
1. In a platen printing press, the combination comprising an oscillatable platen, a gripper device for removing a printed sheet from the platen, means directly connecting the platen and the gripper device for effecting oscillation of the gripper device with the platen and means for reciprocating the gripper device along its axis of oscillation.

2,123,564. IMPRESSION SHEET FOR PRINTING PRESSES. William M. Dalton, Washington, D. C. Application March 11, 1937, Serial No. 130,370. 6 Claims. (Cl. 41—25.5.)

5. A method comprising the steps of affixing a sheet of celluloid to the platen of a printing press, registering a printed impression upon the sheet of celluloid, registering a printed impression corresponding to the impression registered on the celluloid upon the uppermost of a plurality of sheets to obtain an offset impression on the back of the uppermost sheet, affixing makeready to the uppermost of the plurality of sheets or portions thereof having the least impression, placing the makeready sheet beneath the celluloid sheet and aligning the printed legends on the celluloid with those on the top of the makeready sheet to position the makeready in proper relation with respect to the type form used to register the printed impression on the celluloid.

Consult P-Double-E Index Often

Profit with **HAMMOND LEADERS...**



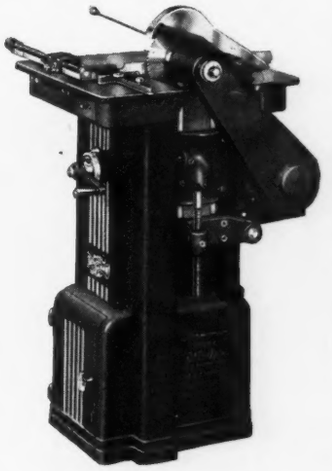
Top view: Model EK8-P with 800 lb. metal pot.
Bottom view: Model EK8 without pot.

HAMMOND EASYKASTER "8"

The balanced rolling bed, the automatic clamping, the automatic change from shell to type-high, the larger casting size (20" width, 27" length), the correct height for inserting mats, the caster locks, the covered rails, the greater accuracy, are the Hammond EasyKaster "8"s superior features that obsolete all other flat casters.

HAMMOND GLIDER

In every detail the three Hammond Gliders obsolete all other composing room saws. Faster . . . easier . . . more accurate . . . ask any of the 500 users.

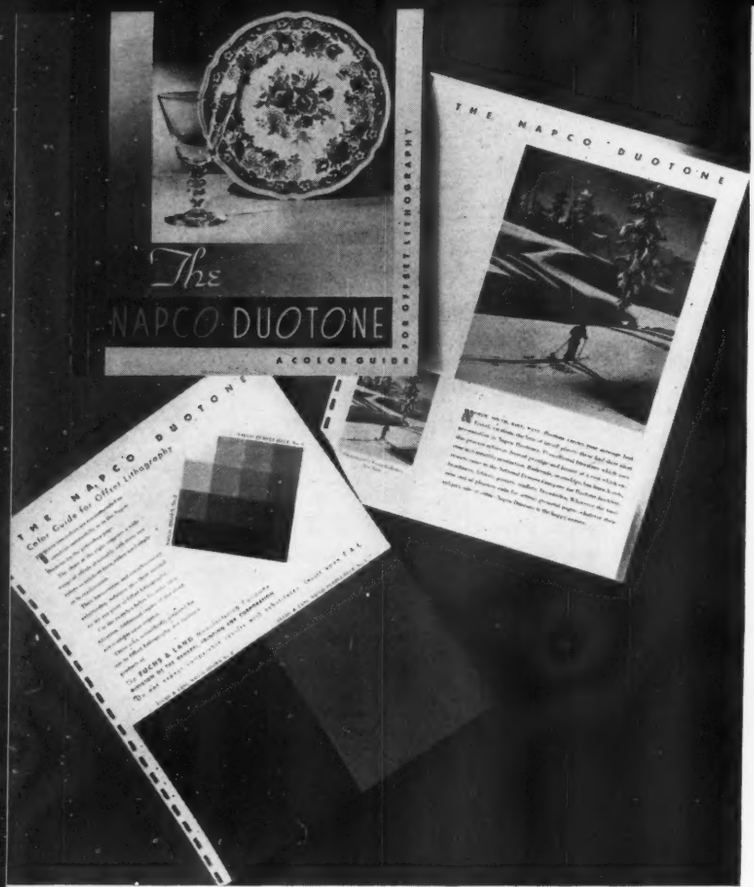


Model G-3
Hammond Glider TrimOsaw

"America's finest saw-trimmer"

Hammond Machinery Builders INCORPORATED
KALAMAZOO, MICHIGAN, U.S.A.

1604 DOUGLAS AVENUE



Three-color effects with two impressions

In the Napco Duotone book published by the National Process Company, offset lithographers, 75 Varick St., New York, is demonstrated how two colors can be made to do the work of three in printing pictures by offset lithography. In explaining Napco Duotones, the producers of the book state a duotone is a lithographed reproduction in two impressions from duplicate halftones of the same original. One of these halftones is contrasty, the other is softer and with closer tonal values, retains and emphasizes the essential detail of the subject. The screens are superimposed at a slight angle to permit a portion of each dot in the second color to appear slightly beyond each dot of the first color. This type of reproduction is slightly stereoscopic in effect.

Immediately following each of many pages printed by Duotone, is inserted a color guide page to show how the pictorial effect is secured on the preceding page. Each of these color guide pages contains color swatches. The key color is shown for straight halftones, type, and in combination with the tints. Each group of colors shows combinations which are printed with solids, 60%, and 30% screens.

The various Napco colors were made for the National Process Company by Fuchs & Lang Mfg. Co., Div. of General Printing Ink Company. A limited number of copies are available to readers of Printing Equipment Engineer *from National Process Co., at the address given above.*

Correction

The average dry mat shrinkage among many A.N.P.A. member newspapers is 9/16 in., instead of 5/16 in. as reported on page 19 in the July issue of *Printing* Equipment *Engineer.*

Through a typographical error, it was made to appear that 5/16 in. is the average dry mat shrinkage being obtained in many newspaper stereotype departments, in John J. Shea's report to the Toronto A.N.P.A. Mechanical Conference.

We are glad to make the correction.

• IMPROVED DESIGN
MAGAZINES
For STANDARD MODELS LINOTYPES

Weigh only 30 pounds. Strong, sturdy, accurate. Price only $95 each; $90 each in lots of six or more. Splits $80 each; $75 in lots of three or more. Sent on trial if desired. Now offered on attractive terms.

**$25 DOWN,
BALANCE $10 MONTH**

So low that they pay for themselves through increased production and time saved. Also made in all-brass style for those who prefer them. Same price and terms. Many other replacement parts, accessories and repairs described in our new free catalog. We buy, sell and trade in new, used and rebuilt typesetting machine equipment. Why not tell us about surplus fonts, molds, motors, etc.?

MONTGOMERY & BACON
TOWANDA, PENNA.

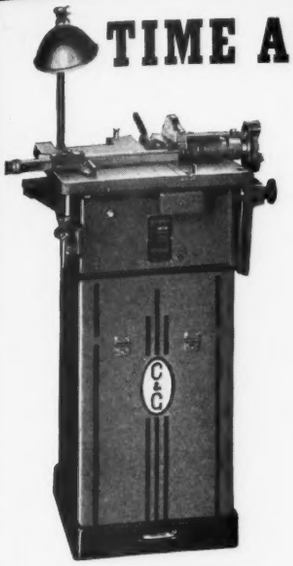
VENTURESOME LADY

Just a veil and a bonnet and a high-necked blouse; just skirt and gloves and stockings and shoes; that is all that protected the adventurous bather of 1906 from the rude stare of the onlookers. The good old days... when Kimble had its great and daring idea, a *specialized* motor built solely and wholly for printers' equipment. For more than 30 years Kimble has "eaten, slept and breathed" such motors. We know you know what the results have been. KIMBLE ELECTRIC COMPANY, 2011 W. Hastings Street, Chicago, Ill.

KIMBLE MOTORS

Distributed by AMERICAN TYPE FOUNDERS
Branches and Sales Agents in Twenty-Five Cities

TIME AND MONEY-SAVING IMPROVEMENTS

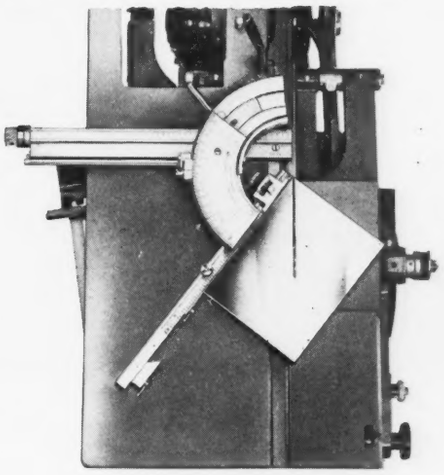


No. 3-A C&G Saw Trimmer

Recognized by printers everywhere as the most versatile saw trimmer ever designed; and the angle gauge and see-through saw guard adds much to its convenience.

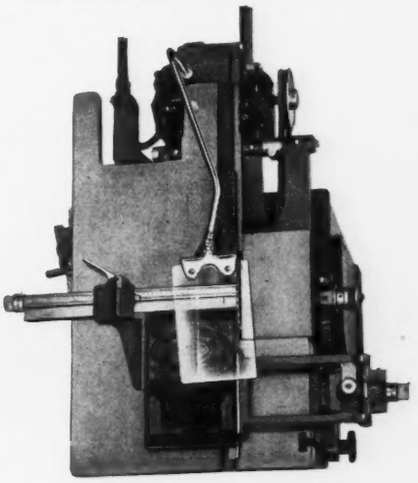
Size of table.....30" x 18"
Heighth from floor.....37½"
Net weight, complete equipment.....387 lbs.
Shipping weight, domestic.....525 lbs.

Improved C & G Angle Gauge
Handles angles from 2 to 90 degrees. Clamping provided for strip materials of all heights and to 72 points wide. Can be applied only on Nos. 3 and 3-A C & G Saw Trimmers.



Showing Angle Gauge in Position.

See-Through Saw Guard
Easy to attach, swivels to side so regular guard can be used. For Nos. 2, 3 and 3-A C & G Saw Trimmers. *It will pay to investigate these time and money-saving improvements.*



Showing See-Through Saw Guard.

Milwaukee Saw Trimmer Corporation

610-612 East Clybourn Street — Milwaukee, Wisconsin

Gage Makes Long Trip

Harry L. Gage, vice-president in charge of sales with the Mergenthaler Linotype Company, will leave New York City July 14 on a business trip that will take him through most of the provinces of Canada, as well as most of the states in this country.

At Vancouver, B. C., August 10, he will speak to members of the Vancouver Club of Printing House Craftsmen on "The Battle of the Processes." Next day, in the same city, he will be a featured speaker at the convention of the Canadian Weekly Newspapers Association, where he will talk on "Building Better Newspapers."

Reporting To Employees

At least 44 prominent companies are regularly providing their employees with special annual reports of the results of company operations, according to *Reporting to Employees on Company Operations*, an illustrated business research study issued by the Metropolitan Life Insurance Company. The study, based on a survey made by the Metropolitan's Policyholders Service Bureau, notes that this list contains only names of companies issuing reports specifically for employees, omitting those that simply provide reproductions or summaries of their reports to stockholders.

The companies whose employe reports were analyzed, the study states, apparently look upon the problem as a three-fold one, consisting of (1) giving the employees and the general public an appreciation of the relations between stockholders, management, employee and customer; (2) conveying a clear understanding of the company's progress during the year, its earnings, expenses, and outlook for the coming year; and (3) outlining some of the economic problems that stockholders, employees and management must face together in the future.

A limited supply of copies of *Reporting to Employees on Company Operations* is available for interested executives.

ASTON PROMOTED

Harold Aston, until recently assistant composing room foreman to Leon Link of the Akron (O.) *Times-Press*, has been appointed composing room superintendent. Mr. Aston succeeds Mr. Link who became mechanical superintendent of the Cleveland *Plain Dealer* on July 25 as announced in the July *Printing* EQUIPMENT *Engineer.*

Special Stockholders' Meeting

A special meeting of the stockholders of R. Hoe & Co., Inc. has been called for August 17 to consider a proposal to sell the business of R. Hoe & Co., Ltd., the company's English subsidiary, to Messrs. R. W. Crabtree & Sons, Ltd. of Leeds, England.

In urging approval of the sale, Mr. McCarty, President, asserts that the terms of the proposal are considered extremely attractive. The plant of the Company's English subsidiary consists of scattered buildings not adapted to modern production methods and approval of the contract will eliminate the problems connected with the building of a new London plant.

The British purchaser obtains in addition to working assets the good will and the right to use the name "Hoe" in connection with printing machinery only and agrees not to use the name in the continents of North and South America, the islands adjacent thereto, Hawaii and the Philippine Islands. Under the proposed terms, the purchaser will pay approximately £470,000 (roughly $2,280,000) which is subject to a number of adjustments.

Gets More Territory

The territory of Charles J. Stupka, representative for the Intertype Corporation in Nebraska, has recently been extended to include the State of Iowa. Mr. Stupka has been associated with the Intertype Corporation for thirteen years. For several years he was in charge of the order department at Intertype's midwestern branch office at Chicago.

Merril C. Dionne

To Sell for Intertype

Intertype Corporation's new representative in the State of Kentucky will be Merrill C. Dionne. Born 41 years ago in Clermont County, Ohio, Mr. Dionne's experience as a printer covers all fields from employee to owner of his own paper. His typographical efforts in Kentucky, Tennessee, Ohio, Indiana, Illinois, and Wisconsin have won for himself a large number of friends. Mr. Dionne will make his headquarters at Intertype's Chicago branch office.

Merrill C. Dionne, Intertype's new Kentucky representative.

Lower Your Press Blanket Costs

Many pressroom superintendents in newspaper plants have greatly reduced their blanket costs by using Fitz Livecork Blankets.

These blankets will not take a permanent set and will give you many more good impressions. They are quick on the rebound and do not bolster.

Send in a trial order—see for yourself. Check the return card in the back of the book, or write us a letter giving your requirements. We will send you complete information and prices.

FitzPatrick Felt Mfg. Co.
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Cleveland, Ohio

Get the "Drop" on Deadline

With...

CHALLENGE *Newspaper and Stereo Bases*

Drop Challenge Sta-Rite Bases in the form . . . lay unmounted cuts on top . . . and let the stereotyper "take it away." No fumbling, no misfits, no delay. Made from fine-grained steel alloy castings, sturdily reinforced, these bases will not shrink, warp, dent, or bruise. Write for full particulars and prices today!

THE CHALLENGE MACHINERY CO.
CHICAGO GRAND HAVEN, MICH. NEW YORK
319

WINS PROMOTION

On July 1, C. E. (Earl) Woodward was appointed mechanical and building superintendent of the Akron (O.) *Beacon Journal*. He will

also remain in charge of the composing room. In 1915 he secured an operating job on the *Beacon Journal* and in 1918 was made assistant to H. B. Reese, the foreman. Mr. Reese has assumed his new duties as production manager of the Miami (Pa.) *Herald*.

Mr. Woodard is married and has three charming daughters.

Woodard is a member of Henry Perkins Lodge, No. 611, F. & A. M., Yusef Kahn Grotto, and Lake Erie Consistory 32 deg. Ancient, Accepted Scottish Rite Masons.

Linotype Operator's Stand

Angle Steel Stool Company states its No. 20-12 Linotype Operator's Stand is constructed entirely of steel. For use by the operator and may be positioned near the keyboard. Overall size is 20 in. wide by 12 in. deep by 20 in. high at the front and 22 in. high at the back. The sloping top is made of 20-gauge steel with 5/8 in. turned-up edges at all four sides. The drawer is 10 in. wide by 12 in. deep by 1¼ in. high with pull-handle. The stand is finished in olive green.

P-Double-E File No. 1E.

Newspapers Install Ludlow Equipment

Ludlows have been installed recently by the Roanoke (Va.) *Times;* Vancouver (B. C.) *Daily Province;* Reno (Nev.) *State Journal;* Burlington (Iowa) *Post;* Edgartown (Mass.) *Vineyard Gazette;* Pekin (Ill.) *Times;* Lake Charles (La.) *American Press;* Dorchester (Mass.) *News;* Ramsey (N. J.) *Journal;* Detroit (Mich.) *Polish Daily News;* and by the Kingston (N. Y.) *Daily Freeman.*

Newspapers Install Elrod Equipment

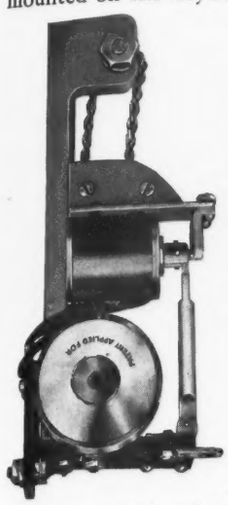
Elrod lead, slug, rule and base casters have been installed recently by the Hagerstown (Md.) *Herald-Mail;* Reno (Nev.) *State Journal;* Sweetwater (Tex.) *Reporter;* Shamokin (Pa.) *News-Dispatch;* Meridian (Miss.) *Star;* and by the Goose Creek (Tex.) *Daily Sun.*

IN NEW HOME

The American Steel Chase Company's offices and manufacturing equipment are now housed in this fine new modern two-story brick building at 31-31 Forty-eighth Ave., Long Island City, N. Y.

Magnetic Elevator Lift

Ralph V. Streeter, printing executive of the Periodical Typesetting Company, Minneapolis, Minn., and a machinist-operator of many years experience, has developed a mechanism for raising the assembling elevator to the delivery slide when the operator depresses a button mounted on the keyboard of a line-composing machine.



The device may be applied to Linotypes, Intertypes or Linographs. Accompanying illustration is one-third its actual size.

The assembling elevator lifting device consists of an assembly mounted under the assembling elevator and at the left end of the rear keyboard rubber roll shaft. Control of the device is effected by a small power tumbler switch under the front edge of the keyboard and an operating key at the left side of the keyboard.

When the operator touches lifting button opposite the lower case "o"-"i"-"n" keybuttons, an electrical circuit is established in a magnet which grips a revolving disk mounted on the left end of the rear keyboard rubber roll shaft. This contact is maintained until the matrix line has passed into the delivery channel. During the time the magnet is attached to the disk on the rubber roll shaft as described above, a sprocket mounted on the magnet shaft draws upwardly on a chain attached to the assembling elevator to deliver the matrix line to the delivery slide. While the matrices are passing from the assembling elevator into the delivery channel, the magnet clings to the face of the disk rotating on a floating shaft while the sprocket remains stationary.

When the current is terminated in the magnet by means of an automatic contact breaker, the assembling elevator descends under control to normal position through adjustment of the counterbalance spring and the revolution of the magnet shaft.

The Streeter Magnet Touch-Lift operates upon a few volts of electricity. A transformer attached to any 110 a.c. outlet is employed. Where d.c. current is available, a different provision has been made. The power applied is sufficient to lift a 42-em matrix line, yet is not sufficiently strong to do any damage to matrices or machine parts or in the event a matrix fall to the right. The ascent of the assembling elevator can be retarded through pressure of one finger.

Mr. Streeter, who has been granted a patent upon the device, states that should a matrix fall to the right, past the assembling elevator pawls to stop ascent of the elevator, no damage will result. Should such a stoppage occur, the operator's left hand supports the elevator and a finger of the right hand throws the small power switch to "Off." The elevator is lowered to normal position and the matrices straightened up. When the switch is turned on again, the assembling elevator rises automatically.

Further details respecting the Streeter MagneticTouch-Lift may be obtained from Ralph V. Streeter, Periodical Typesetting Company, 421 South Sixth St., Minneapolis, Minn.

P-Double-E File No. 1G9.

EDES IS PREPARED

Tomorrow a news story may break trebling demand for zinc in twenty-four hours. Edes with its huge 30-ton smelter—with capacity to supply all the photo-engraving zinc used in the United States—is prepared to meet such unusual demands. Processing of zinc, requiring highly skilled labor and elaborate equipment, cannot be hurried. Edes produces Superfine Quality Zinc—uniformly dependable at all times.

EDES SUPERFINE QUALITY ZINC

USE EDES HARD MATRIX ZINC FOR MATRIX WORK

THE EDES MANUFACTURING CO., PLYMOUTH, MASS., U. S. A.

HEADQUARTERS FOR SUPERIOR BRAND COPPER AND PLYMOUTH BRAND BRASS

SALES REPRESENTATIVES

Chemco Photoproducts Co.....25-27 S. Market St., Chicago
Chemco Photoproducts Co.....Queen and Crescent Building, New Orleans, La.
Allan B. Croke Co.....163 Oliver Street, Boston
G. C. Dorn Supply Co.....125 East Pearl Street, Cincinnati
Mid-West Photo-Engravers Supply Co..514 North Third St., St. Louis
E. H. Walker Supply Company..1315 14th St., N.W., Washington, D. C.
Selby Mohr.....883 Mission Street, San Francisco
Metzger Photo Supply Co.....1091 South Main Street, Akron
C. S. Illingworth.....49 Springville Ave., Buffalo, N. Y.
Thompson-Hayward Chemical Co.....909 2nd St. So., Minneapolis
Thompson-Hayward Chemical Co.....2228 Blake Street, Denver

PHOTO OF TEXAS SCHOOL HOUSE WHERE 600 WERE KILLED — ACME NEWSPICTURES

Pressure

(*Continued from Page 32*)

can be tested by an erector and necessary corrections made. Clean printing and less makeready may then be expected.

Reverting to faith in the builder, we must rely not only on his intelligent designing and construction but also on his choice of materials since a well designed and accurately constructed press may prove a failure because of hidden or inherent weakness in the materials. At lest two-thirds of a press is cast iron and virgin iron best resists warpage after aging.

Precision Cannot Be Held With Extreme Pressure

While the ideal kiss impression is never attained, the intelligent pressman realizes that no more pressure than necessary should be used. The press is a precision machine. Precision cannot long be held when extreme pressure is applied. Outside pressure on metal may result in bending, compression, shearing, tension or torsional strains. More than one of these strains may occur at the same time. Repetition of these stresses causes deformation of the metal and when its elastic limit has been passed a permanent deformation remains. This deformation shows in the high and low spots of the cylinder and bed which make necessary so much extra makeready.

As pressure is on the outside of the cylinder the tendency is to increase any variation and change the circle into an ellipse.

Hacker Test Blocks now furnished by Vandercook & Sons, Inc., are used to disclose the inaccuracies of impression of cylinder presses, and by means of a permanent spot sheet to level the impression. A secondary advantage is to determine and standardize the proper amount of cylinder packing for each press so that the "impression" is uniform in a battery of presses. A third benefit is the checking and discovery of mechanical defects or maladjustment calling for mechanical servicing.

These test blocks are gauges of hardened steel 1 in. by 2 in. with relief printing lines milled in the surface, ground and lapped type high (0.918 in.) with tolerance plus or minus quarter thousandth in. The blocks are furnished in plush-lined oak boxes, each box containing 50 blocks.

In use, the press bed is filled with the blocks. The blocks must be caged from sliding but not locked, so the blocks will not slide when the bed reverses.

The permanent spot sheet made up through use of the Hacker Test Blocks will need replacing once or twice a year. Minor defects of impression in presses are the products of use so that periodic checking every six or twelve months is necessary.

Reconditioning the Press

Before starting to recondition a press the cylinder should be removed and the journals examined. If out of round, the bearing brasses will be worn correspondingly. The journals should be turned true and the brasses rebored and fitted. The periphery of the cylinder should be turned true, new bearers sweated on if needed and the bed of the press resurfaced or planed.

R·B·C

REID

Replacement Parts

for

Linotypes & Intertypes

will effect real economy
in the maintenance of
your composing room.

Send for Illustrated Catalog

REID BROTHERS COMPANY, INC.
ESTABLISHED 1900
BEVERLY, MASSACHUSETTS

We Can't Change The Weather—

But . . .

we have perfected our gummed packing felts to the point where they stick only where intended and when moistened. Neither strips nor sheets stick together, regardless of humidity conditions.

Equally important, A. P. S. GUMMED PACKING FELTS do not drop off of the mat AFTER SCORCHING.

If you are troubled with either of these conditions, NOW would be an excellent opportunity to become acquainted with one or all of our three qualities of gummed packing:

A. P. S. SUPERIOR
A. P. S. THERM-O-SET FUZON
A. P. S. FLEX-O-FELT.

Just a line from you will bring you complete details and generous working samples.

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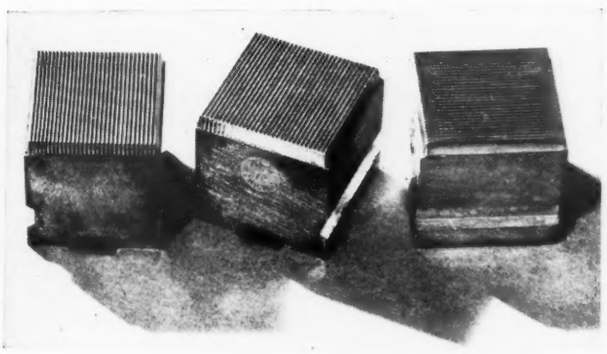
Legend is a good liniment for conventional body-sets, applied, say, to head and foot! But when all the unit is set in Legend... see how that unit comes to life and talks!

Bauer

PLEASE WRITE FOR SPECIMENS TO THE BAUER TYPE FOUNDRY, INC • 235 EAST 45TH STREET • NEW YORK CITY

One firm uses a device which is attached to the press and serves as a combination turning and planing tool to true up the periphery of the cylinder and the bed after calibration. This tool cannot achieve the ends for which it is designed until the cylinder bearings have been trued up and refitted.



View of several M&L Presstest Blocks. These blocks are cast from hard type metal on a foundry type machine in the plant of the M&L Typesetting & Electrotyping Co. Each block is 72 pts. square and type high (0.918 in.). The printing surface consists of a series of straight lines. These blocks are used to test impressions on cylinder presses. Manufacturer states, however, the blocks are not a substitute for mechanical servicing of the press. Before the blocks are placed on the press bed, known defects, such as low standards, correct setting of cylinder, uneven or low bearers should be taken care of by a qualified machinist. It is also claimed the importance of casting these blocks in type metal is that the exact weight of the type form has been achieved, thereby securing the same stress and sag on the press as in actual running conditions. When used according to directions accompanying the blocks, a permanent overlay is attached to the cylinder and instead of making ready for structural weaknesses in the press the pressman need only contend with the job itself, which, of course, includes the base and plates.

Testing Blocks

Another firm can furnish the printer with a set of testing blocks which are placed on the bed of the press in lieu of a form. With reasonable inking and impression a proof is pulled which shows strained spots. An overlay is marked out to correct the weak spots, patched up and buried in the packing as part of the permanent overlay. In many cases this serves as a valuable palliative.

An Intolerable Condition

The pressure on a bearing is generally in one direction. It is natural for the pressman to use more pressure as the wear continues and so the destructive action increases. Of course, there are adjustments to combat the wear but when the journal and bearing brasses of the cylinder are worn oval there is no remedy but turning true the journal and reboring and refitting the brasses. If the wear is greater at one end the cylinder will be lower at that end, causing the cylinder and bed to run out of parallel, an intolerable condition which makes good printing impossible.

Defining Cylinder and Bed Motion

In theory, each successive line lengthwise of the cylinder must come into and go out of pressure with each corresponding successive line across the bed squarely, without any other relative movement. To meet these conditions a geometrical cylinder and a geometrical plane are needed. The cylinder must rotate on its own axis at the same circumferential speed as the plane. The moving plane in its reciprocation must travel in its own plane and tangent to the cylinder and its direction in this plane must be such that a point in the moving plane shall describe a straight line, which line must remain

in a plane at right angles to the axis of the cylinder. With the makeready in position the cylinder must run true with its journals, be of correct diameter to suit the pitch-line of the gears and parallel lengthwise. The bed must be straight in every direction and moving on tracks whose top surfaces are straight in every direction under impression. The bed must be guided sidewise by stationary surfaces which are square to the axis of the cylinder. The top of the form and the bottom surface of the bed must be parallel. The foregoing cylinder and plane arrangement with equal surface speed is a mathematician's description of the vital principle of pressure in printing and should be mastered and ever kept in mind.

Relationship of Pre-Makeready

It is evident that in order to meet the conditions stated we must have a press in good condition and a level, type-high form. The importance of pre-makeready in obtaining a type-high form should be emphasized. The type-high form is the base from which the press builder and the pressman work. Without the level type-high form, makeready is needlessly lengthened and the standing time of the production press increased. If printing from a form not level and type-high is attempted, all sorts of trouble from slurs, workups, pullouts, smashes and loss of register may be expected.

Extreme Shocks Due to Accident

In addition to the unavoildable wear which occurs with careful adjustment and operation of the press and thorough makeready to obtain a close approach to a kiss impression there will be extrme shocks due to accidents. In operating automatic feeders "ball-ups" occur which often ruin a large plate form and workups ending in pull-outs frequently cause serious damage to the form. Needless to say, such accidents cause severe strain at least on the press. An examination and correction should follow each accident.

Shimming Bed Supports

Sometimes presses show impressional weaknesses in spots not caused by deformation of the surface of cylinder or bed or considerable wear in the cylinder journals. Intelligent shimming of supports under the bed is often the corrective. One experienced pressman who had mysterious workup trouble stopped it by shimming up bed supports where needed.

Other Movements Affecting Impression

In addition to the pressure which transfers the ink from the form to the paper there are three other movements in an impression. The first is the rotary movement caused when the soft packing of the cylinder rolls over the harder surface of the form. The softer surface travels faster.

The second and third movements are across the periphery of the cylinder and are caused by the angles of the type characters and other units of the form.

Printing from Heavy Forms

The undesirable rotary movement has caused much trouble from wear, slur, packing piling up in margins and pulling out or breaking at the gripper edge. This trouble is most common on heavy forms and experiments have proved that it is better to carry the form higher than 0.918 in and keep the packing no higher than the

Cleaner, Sharper news type

● Modern news types are easier to read than the types which were used in the past; but their value is largely dependent upon the skill of the stereotyper. FLEX dry mats are particularly good for news type pages, first because they take and hold a clean, sharp, deep impression, and second because they make a good mold at comparatively low pressures. The latter feature tends to prevent breaking down porous slugs, and this, too, makes for cleaner printing of news and classified pages.

Send for samples of FLEX dry mats and give them a trial on your own news type. Note also how nicely they reproduce halftone and Ben Day screen dots, particularly in the middle tones and highlights. When writing, please specify gauge, shrink, number of casts, and type of casting equipment. Address Flexideal Dry Mat Company, 21 West Street, New York.

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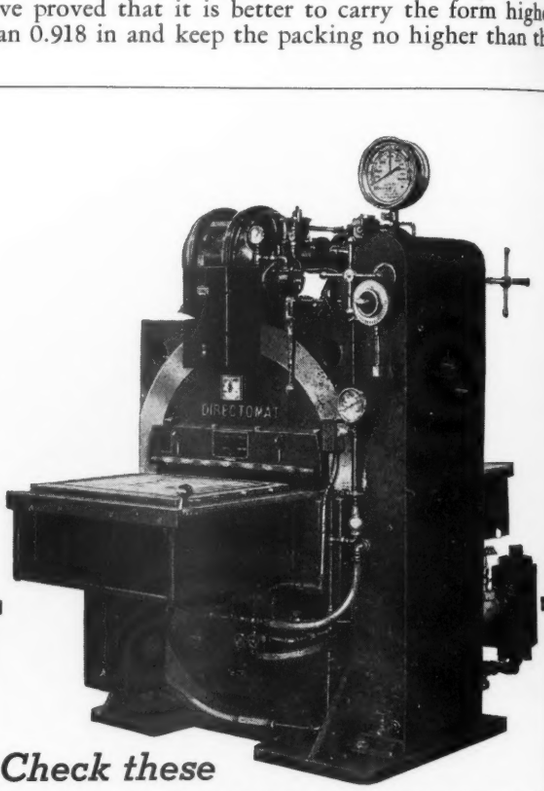

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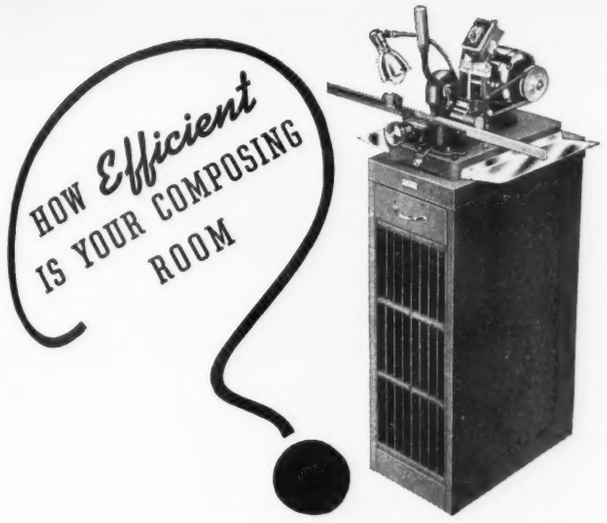

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cylinder bearers. By raising the bed bearers heavy forms are carried as high as 0.924 in. The bed bearers should be shimmed to 0.920 in. This arrangement makes over packing of the cylinder unnecessary.

If the bearers of two surfaces rolled together have the same diameter as the pitch-line of the gears they will travel in unison or at the same speed. It then becomes necessary, at times, where one surface is hard (the form or plate) and the other soft (the packing) as on a printing press to alter the heights of form and packing from the theoretical standards so that they will travel together in unison with the bearers.

Experiments on the offset press proved that on cylinders of 20 in. bearer diameter the plate cylinder should be packed 0.010 in. higher than bearers and the blanket cylinders 0.008 in. under bearer height, allowing 0.002 in. for squeeze. True rolling contact was thus obtained without "tails" on the dots of halftones or "long" prints. The design on the plate and the print from it on the blanket measured exactly the same.

When Is It Worn Out?

By W. F. SCHAPHORST, M. E.

THE rule or formula that answers this question definitely has not yet been written. It is not easy to write one that is applicable to everything in printing plants. Some automobile owners, for example, declare a car "wears out" in one year and they annually trade in their one-year-old cars for new ones. But the "old" car still continues to run for a number of years in the hands of subsequent owners. Whether or not an automobile is worn out, therefore, is largely the whim of the owner.

In some steam power plants ten-year-old engines or turbines have been "junked" and replaced by more efficient and more economical apparatus. The selfsame equipment in other less progressive power plants would have been kept another ten years or more.

We all have our own ideas about worn out clothes and when they should be replaced.

The average man "wears out" one straw hat and one felt hat each year. Women "wear out" hats more rapidly than men.

Some people use lead pencils until they are "stubs." Others discard them as soon as they are inconveniently short.

And so on.

What, then, is a good rule?

My answer is this: A thing is worn out as soon as it is found that it will PAY to replace it.

For example, a given typesetting machine is old and rickety and is frequently in need of repairs. The typesetting machine was a good one in its day, but now it is "too old." The cost of repairs, plus the cost of non-production, plus the cost of loss of reputation, amount to a sum much greater throughout the year than would be the cost of a new machine. In such an event it would surely PAY to install a new typesetting machine.

Simply because we can "get along" with an old machine part, or thing, is no proof that it is not already worn out. My contention is that entirely too much equipment is in daily use in printing plants that is "worn out." It should be replaced because it will PAY to replace it.

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Vulcan Gelastic Rollers

Strip Film

(*Continued from Page 38*)

fastened to the new base upon which it was to be stripped when the emulsion side of the film was to be stripped up or away from the base. Often, however, the ends lifted, and curling set in when the adhesive dried. Since then, two better solutions have been developed. Both are used with success.

Of course, the quickest and most economical way is to strip the film, face or emulsion side, down, on a thoroughly clean surface, using clear water. To make use of this feature, arrangements in the camera room must be effected. This emulsion-side-down method is especially good where lettering on a subject is to be stripped in for but one shot and then removed. Strip film halftone patches may be made direct to regular film over line work. For close patching, strip film will effectively remove contact trouble that may result from a double thickness of ordinary film. However, work stripped face down fails to stand up under the severe usage of repeated washings and opaqueing. Therefore, if a more permanent adhesion be desired, or should it become necessary to strip the film face up (away from the support) then it is expedient to make use of an adhesive to insure positive contact.

Two adhesive solutions have been developed for this use by the Eastman Kodak Company. They may be stored in a jar, a brush being used to apply the solution to the areas in work. The first will seem a bit slippery under the membrane, but once the film or membrane is positioned, smoothed out, and permitted to rest, a firm adherence is guaranteed, with no curling up to endanger the ends of the film. To make the first solution a half-ounce of granulated gelatine is stirred into 16 ozs. of water. Then 2 ozs. of 28% acetic acid (3 parts of glacial acetic acid to 8 parts of water will yield a 28% acetic acid) is added; the solution well stirred, and enough water added to make 32 ozs. of solution.

The second solution is a better one, but requires more attention in the compounding. ¾ oz. of No. 1 Nelson's Gelatine is soaked in 32 ozs. of water for about 5 minutes until it swells. The solution is then brought to a boil in a double boiler, and ¾ oz. of LePage's glue well dissolved in 16 ozs. of water is stirred into the gelatine solution. When this cools it jells. But when this jelled solution is heated again, it will become fluid and stay that way. Then add 4 drops of formaldehyde to every 10 ozs. of solution.

The adhesives properly applied are ideal for color work, where one subject is opaqued several times and used for a number of colors. Under this heading comes the job where key outlines are included in the sketch. This may be photographed on strip film, and stripped to glass with the adhesives mentioned. Colors may then be opaqued in and washed off as needed without any danger of misregister.

But to attempt to register a close-fitting color job with strip film involves efforts just as skillful and painstaking as those in wet plate work. The membrane will stretch just as did the wet plate film. There lies in strip film, however, the advantage of heating and shrinking the whole while it is still on the transparent base, directly after it has been photographed and dried. This shrinking or pre-shrinking as it is called, takes

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CUT MOUNTING TAPE

No tacks. No cement to squeeze out. Simply lay a strip of this super-thin tape under the cut; press down by hand, and the cut is there to stay. When through, the tape strips off, leaving clean surfaces on both cut and base.

Free samples on request.

"FLECTO"

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Practical knowledge and research have combined, to produce this backing felt which is successfully used on all dry mats. Made in gauges .025, .030 and .035—sheets 18 in. by 24 in. and gauges .040, .045 and .050—sheets 18 in. by 22 in. Cut into strips without charge.

Free samples on request.

Do not be misled by similar-sounding names seeking to trade on the wide-spread acceptance of "Plate-tak" and "Flecto."

EASTERN NEWSPAPER SUPPLY

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care of the slight diviation from size which occurs when the membrane is removed and stripped.

Camera Room and Stripping

Strip film must have an acetic acid rinse bath, or stop bath as it is known. If this is not employed in regular film work (as it should) then it must be supplied for strip film. The D85 developer, used on orthochromatic and halftone film, may be used for strip film also. Should reduction of dots be necessary, it is suggested that the chrome alum be left out of the fixing bath and replaced by potassium alum. After developing, the film should be washed in cold water not warmer than 65 deg. F. This insures the adherence or retention of the membrane to the transparent support, making for easier handling prior to stripping.

Sometime ago our friend, John Eagan, showed us how unnecessary it was to soak the membrane from the base prior to stripping. The same procedure is used with the dried strip film as was used in cutting wet plate film. Cut through the membrane with a sharp razor only far enough to barely mark the backing as shown in Fig. 1. Experience will establish the proper pressure to do this. Of course, the subject is outlined in these cuts. Bend the whole film a bit at the intersection of two cuts (Fig. 2). Grasp the membrane that springs up; lay the whole film flat; and free the membrane from the base with gentle tugs. This whole procedure is followed with the film absolutely dry. The method is especially beneficial when using the adhesive solutions recommended, for no water then dilutes the adhesive. It also renders unnecessary the sloppy trays. The released membrane is placed upon the new base which has been generously moistened with the adhesive or clean water, as the case may be. It is positioned and squeegeed out flat with small pieces of blotting paper exactly as has been the custom in wet plate stripping.

Strip Film Steps Into Newspaper Work

Photo-engraving appears to be the last stand of the wet plate. But even there, in newspaper work, strip film has stepped into the picture. Recently, the editor of *Printing* Equipment *Engineer* described the change-over from wet plate to strip film that took place at the Cleveland *Plain Dealer*. Wet plate was eliminated entirely in that plant. In 1937 more than fifty newspapers had gone to strip film, including many of the major papers. D. D. Curriden, Photo-engraving Superintendent of the Minneapolis *Star*, gives further support in the July 1938 article in *Printing* Equipment *Engineer*.

William Falconer, of the Eastman Kodak Co., tells of the increasing use of strip film in all branches of the graphic arts. In lithography the demand has risen steadily. For, properly worked, it will be found to be superior to wet plate. Figures indicate it is more economical to use strip film than wet plate. Glass washing, costly collodion, the silver bath and its troubles, costly sink negatives, are some of the factors connected with wet plate work which have been relegated to the limbo of the forgotten past by strip film. Gone also are the messy camera-backs, darkrooms, and risk attendant on wet plate. Gone also the separate room for the silver bath, for strip film and regular film are worked exactly alike. Photography becomes much simpler, cleaner, and far less costly with strip film than ever was possible with wet plate.

These factors alone make strip film a necessary substitute for wet plate in any litho shop. Combine them with the many other advantages, and you'll see why wet plate is *passe*.

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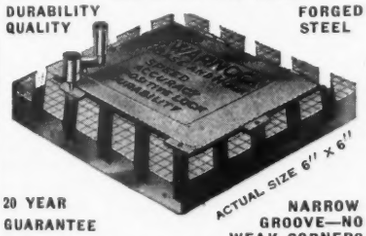

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Carnegie Tech Graduates

Glenn U. Cleeton, Head of the Department of Printing, Carnegie Institute of Technology, Pittsburgh, has announced the graduates in this year's class, Printing Department, and the printing firms who have employed one or more members of this class.

The graduates are as follows: Ralph Winslow Babcock, Jr., Great Neck, N. Y.; Marshall Glenn Baldwin, St. Joseph, Mo.; Danie Russell Brown, II, Palo Alto, Calif., Ph. B., Brown University, 1931; Walter John Ellis, Pittsburgh; Paul Leroy Gibson, Harrisville, Pa.; Bernard Jack Greenberg, Pittsburgh, Zachary Taylor Hederman, Jackson, Miss., B. A., Mississippi College, 1935; John William Irwin, Pittsburgh; Kjell Henrik Henriksen Lyngheim, Edgewood, Pa.; John Marcon, Pittsburgh; Jerry J. Matelan, Swissvale, Pa.; Herbert Moscow, New York; Leo Napotnik, Johnstown, Pa.; William Fredrick Otto, Jr., La Grange, Ill.; John Morris Robinson, East McKeesport, Pa.; Bernard M. Shlossman, Bayonne, N. J.; Charles Edwin Thomas, Wichita, Kans., B.A. University of Wichita, 1936; Benjamin Franklin Zercher, Ashland, Ohio.

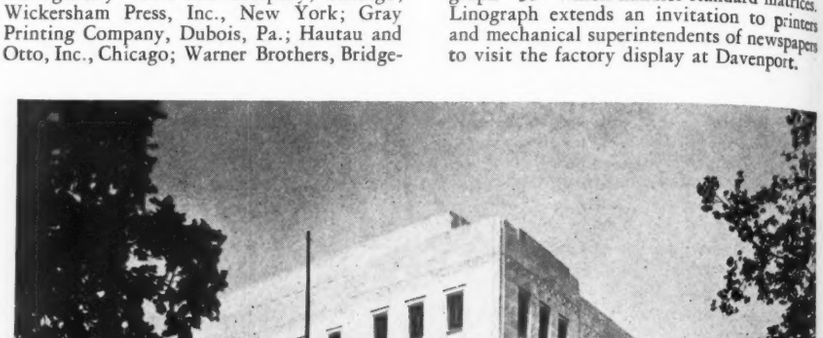
Firms which have employed one or more members of the 1938 class are as follows: Ransdell, Inc., Washington, D.C.; Shell Oil Company, New York; R. R. Donnelly and Sons, Chicago; Hederman Brothers, Jackson, Miss.; The Purse Company, Chattanooga, Tenn.; Montgomery Ward and Company, Chicago; Wickersham Press, Inc., New York; Gray Printing Company, Dubois, Pa.; Hautau and Otto, Inc., Chicago; Warner Brothers, Bridgeport, Conn.; Jersey Printing Company, Bayonne, N. J.; United States Envelope Company, Springfield, Mass.; A. L. Garber and Company, Ashland, Ohio.

Twelve Intertypes for Government

Twelve new streamlined Intertypes, each with automatic quadding and centering device and electric melting pot, have been ordered by the United States Government. These machines will be used in the composing room of the new Library of Congress. The building has just been completed. The order, according to Capt. A. T. Mann, Vice President in Charge of Sales of Intertype Corporation, consists of four eight-magazine machines, eight six-magazine machines, and seventy fonts of Intertype matrices. With this installation twenty-two Intertype machines will be in operation in the G.P.O., all of which have been ordered during the past two years. Captain Mann also said that twenty-two government printing offices in other countries are using Intertypes.

Linograph Opens Show Room

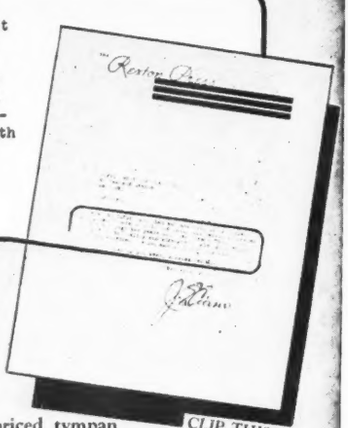
A new show room for the display of the entire line of Linograph typesetting machines, has been just opened by Linograph Corporation in its factory at Davenport, Iowa. Among the machines on display is the new Linograph "50" which handles standard matrices. Linograph extends an invitation to printers and mechanical superintendents of newspapers to visit the factory display at Davenport.



New Library of Congress Building, Washington, D. C., which just recently has been completed.

"10 YEARS"

"we wish to inform you that we have been using Riegel Tympan papers on both our Kelly and Vertical presses for the past ten years and have always found them uniform in quality and strength in giving us first-class service. We recommend it very highly."



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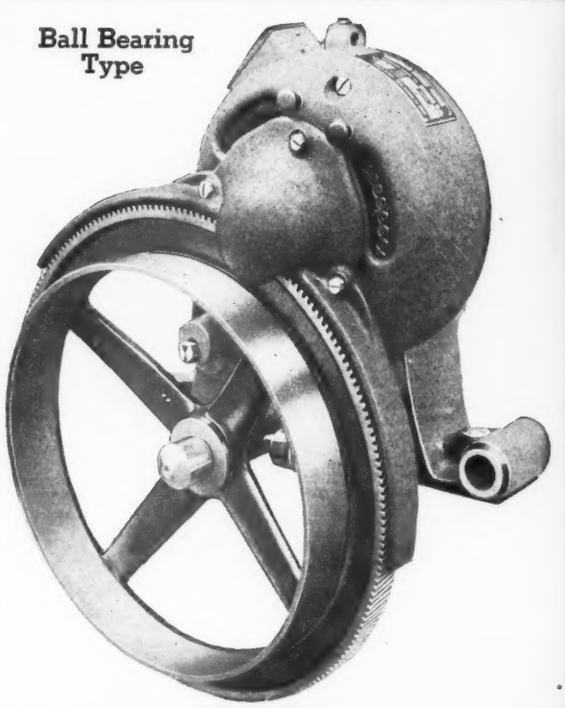

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Equipment

SALES

Orders Received By GE

Orders received by General Electric Company during the first six months this year amounted to $128,223,823, compared with $217,265,619 for the same period last year, a decrease of 41%, President Gerard Swope announced recently.

Orders received during the second quarter of 1938 amounted to $62,847,423, compared with $111,518,589 during the corresponding quarter of 1937, a decrease of 44%.

Recent Webendorfer Installations

Albert H. Vela Co., 305 East 46th St., New York, N. Y., 17 by 22 press. This concern is considered one of the best letterpress shops in the City.

We have just recently sold a 17 by 22 press to the Rein Company, Houston, one of the best letterpress printers in the State of Texas.

Clay Printing Co., Hickory, N. C., 17 by 22 press.

The Welker Company, 4835 Woodward Ave., Detroit, Mich., 17 by 22 press. This concern is one of Detroit's large letter shops.

Wayne Paper Box & Printing Co., Ft. Wayne, Ind., 22 by 29 press.

Printing Vocational High School, Cincinnati, 17 by 22.

Conde Nast Publications, Greenwich,Conn., has purchased six web offset units.

Simplicity Pattern Co., Niles, Mich., has recently added two more Webendorfer web offset presses. This plant now operates six units of this type of equipment.

Recent Linotype Installations

Linotypes recently have been installed by the Terre Haute (Ind.) *Advocate;* LaCrosse (Wis.) *Tribune* and *Leader-Press;* Council Bluffs Typesetting Company, Council Bluffs, Iowa; Sudbury (Ont.) *Star;* Ingalls Printing Company, Brooklyn, Conn.; Frankton (Ind.) *Press;* Hattiesburg, (Miss.) *American;* Fred York Printing Company, Boise, Idaho; Rose Press Company, Portland, Ore.; City Publishing Company, Nashville, Tenn.; Glasgow (Ky.) *Daily News;* Cunningham & White, Edinburg, Texas; Scranton (Pa.) *Times;* Henderson (Neb.) *Review; Free Press,* Clovis, Neb.; Wallace Linotyper, Chicago; The General Council of the Assemblies of God, Springfield, Mo.; The Lord Baltimore Press, Baltimore, Md.; Dallas (Texas) *Dispatch;* Lawton (Okla.) *Morning Press;* Kilgore Linotyping Company, Chicago; *Le Droit,* Ottawa, Ont.; Creston (B.C.) *Review;* The Ronalds Company, Ltd., Montreal.

Changes at ATF Branch Offices

Announcement is made of the appointment of Harry W. Detlef as Manager of the Minneapolis Office of American Type Founders, to succeed Ansgar Gydesen, who has resigned. Mr. Detlef has been with ATF since 1923, covering the trade out of Kansas City Office.

J. Gerald Scales transfers from the Buffalo office of ATF to take over Mr. Detlef's Kansas City territory. "Jerry," as he is familiarly known to many upstate New York printers, has had 24 years experience in the Graphic Arts, 14 of them spent in actual work in printing plants.

Technical Literature

Linotype Telephone Faces

Eight-page leaflet shows various matrix faces made by Mergenthaler Linotype Company especially for telephone directory composition. *P-Double-E File No. 1G5.*

Fratex Packing Material

Plastic-bound booklet explains functions of Fratex Resilient Packing Material for cylinder and rotary presses and contains swatches of the various kinds offered. Explains purpose of each kind of packing.

P-Double-E File No. 5L.

Ebolite Halftones

Folder—Liberally illustrated with several types of halftones demonstrate printing qualities of Ebolite halftones. Descriptive matter gives full information.

Variable Speed Control

Catalog—No. G-384, 8½ in. by 11 in., more than 200 illustrations, lists the complete line of Reeves variable speed control equipment. Mechanical binding with heavy cover.

P-Double-E File No. 5CC.

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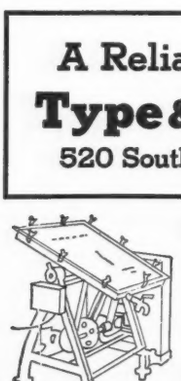

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(*Continued from Page 21*)

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Psalm Book will be placed a copy of the Indian Bible, the work of John Eliot, printed by Samuel Greene and Marmaduke Johnson in 1661-63.

"No less than 60 titles from the Cambridge press of Samuel Greene and Marmaduke Johnson will be on view. Among these will be the tracts of such influential divines as John Davenport, Nathaniel Morton, William Stoughton, and Samuel Danforth. The word "New-England" is spread over almost all the title-pages. A characteristic title: *A brief Recognition of New England's Errand into the Wilderness*, printed in 1671.

"A whole range in the exhibition will be given over to books printed by the early presses of Boston. Increase Mather's *The wicked man's portion*, printed by John Foster in 1675, was the first book issued by a Boston press. Other books by Foster will also be shown—among them two works by William Hubbard, *The happiness of a people*, printed in 1676, and *A narrative of the troubles with the Indians*, 1677; then Rogers Williams's *George Fox digg'd out of his borrowes*, 1676; and a copy of Anne Bradstreet's *Several poems*, 1678. After Foster's death Samuel Sewall, the diarist and justice of the superior court, had charge of the press until 1684. Samuel Willard's *Ne sutor ultra crepidam*, printed in 1681, is one of the books printed during his time.

"The development of printing in Boston during the eighteenth century will be represented by examples from the presses of John Allen, Benjamin Harris, Timothy Green, James Franklin, Thomas Fleet, Samuel Kneeland, Bartholomew Green, and others. Here the visitor may see such rarities as Richard Baxter's *A call to the unconverted*, 1717; Benjamin Colman's *The hainous nature of the sin of murder*, 1713; Cotton Mather's *Supplies from the tower of David*, 1708; and Thomas Bridge's *What faith can do*, 1713.

"The Worcester press of Isaiah Thomas offered the keenest competition to the Boston printers both during and after the Revolution. Here the exhibition will include Isaiah's type-specimen book, folio Bible, children's books, as well as several literary works.

"The library has a copy of the second book issued by a Pennsylvania press: Thomas Budd's *Good order established at Pennsilvania*, printed by William Bradford in Philadelphia in 1685. Daniel Leed's Almanack, 1687, will be also shown, together with half a dozen other Bradford titles. The group of volumes from the Philadelphia printing shop of Benjamin Franklin will include the *Cato Major*, 1744, and various issues of Poor Richard's almanac, of which the Library has an almost complete series. Still other Philadelphia printers will be represented. From the press of Christopher Sauer in Germantown will be shown the 1743 Bible and a 1757 Almanac.

"Specimens of early New York printing will include the work of J. Peter Zenger, James Parker, Hugh Gaine, and others, among them Jonathan Dickinson's *Remarks*, 1729, Samuel Cook's *Necessarius*, 1731, Micajah Towgood's *The Dissenting Gentleman's Answer*, 1748, and Aaron Burr's *A servant of God*, 1757.

"In Connecticut, printing was begun in 1709 at New London. The presses of Thomas Short and Timothy Green in that city, of Roger Sherman and Benjamin Mecom in New Haven, and of Elisha Babcock in Hartford are well represented, with items such as Samuel Whitman's *Practical godliness*, 1714, Azariah Mather's *Wo to sleepy sinners*, 1720, Jared Eliot's *Give Cesar his due*, 1738, and Joel Barlow's *The prospect of peace*, 1788.

"The first book printed in New Hampshire comes from the press of Daniel Fowle, Portsmouth, 1756. It is Jonathan Parson's *Good news from a far country*, and begins the exhibit of these imprints which will include also a copy of Jonathan Sewall's *Miscellaneous poems*, 1801.

"The work of the small-town presses is indeed amply shown by a selection of eulogies published upon the death of George Washington. The Library has no less than 250 such items, printed all over the country, in the villages of Vermont and New Hampshire as well as in those of the Southern coast and the Mississippi. It is difficult to see these booklets without emotion. In their brown, green, and blue paper covers, they are no masterpieces of the printer's are, yet quaint and homely as they are, the crowded title-pages are arranged with taste, the pages are well-proportioned, and the margins are generous. Luckily, most of these pamphlets in the collection have escaped the binder's knife; the pages are frayed, but they are intact, indeed in some cases altogether unopened. The towns of Massachusetts are best represented in the group. Of course, most of the localities had to turn for help to the printing offices of Boston, Salem, Lynn, or Newburyport, but there are enough items to show the activities of the printers of such places as Ipswich, Leominster, Haverhill, and Greenfield.

"Although they have nothing to do with early printing in America, no visitor will question the appositeness of the presence of three volumes in the exhibit: that of a magnificent copy of the first edition of the Columbus letter, printed in May 1493 in Rome; of a copy of the *Cosmo graphiae introductio*, printed in 1507 at St. Diey, the book in which for the first time there appeared the word "America;" and finally, of a hand-drawn portolan atlas made in the middle of the sixteenth century—in all probability in actual use by one of the early explorers of the century."

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Improve Lighting

(Continued from Page 26)

variety of structural types, including the side-window lighted, the monitor and the saw tooth types.

Measurements of light intensity were made by means of a light meter, at 6-ft. intervals across the width of the building before and after repainting. Interesting is the fact that at 5:10 p.m. March 12th after repainting, the working light was 15 foot-candles in the middle of the monitor bay, as compared with 5 foot-candles prior to painting. Readings were taken on days of comparable brightness out-of-doors, and the paint job was but one coat over a very dirty surface. A second coat would have made even greater improvement. This is not an exceptional incident. It represents a typical case history and one that can be repeated in many printing plants. It shows what can be accomplished by proper painting, in increasing lighting values and improving working conditions and operating efficiency.

Regardless of the structural type of the building, the reflection value of the upper walls and ceiling remains an important factor in providing ideal seeing conditions. In fact, the efficiency of a monitor or saw tooth ceiling is very largely dependent upon how well the light is thrown down to the working plane by naboring surfaces of good reflection value. In side window lighted buildings the sharp drop in light a short distance back from windows may, to a considerable extent, be avoided by means of white painted ceilings and upper walls. Windows and lighting fixtures should be kept as clean as possible to gain the most from all available day and artificial light. Consideration of these important points in plant maintenance will be well rewarded by better morale and more profitable operation.

Keeping Metal Off the Ladle

In the plant of the Cleveland Typesetting Company, Stanley Sender, plant machinist, has discovered that when pouring metal into pigs with a hand ladle, metal can be prevented from tinning or accumulating on the area outside of the ladle underneath the pouring lip by rubbing with Vitaflux. The objectionable drippings which fall to the floor or upon the molds is prevented.

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Technical Information and Literature

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For Your Convenience—Circle the numbers on the convenient postage-paid return card, supply your name, title and company address and mail—we do the rest. Manufacturer or supplier will send you information or literature about equipment or supplies advertised in this issue. This card saves you time and postage—Keep Informed.

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1 BRONZER—"New bronzing standards given in certified report. Investigate the Christensen high-speed bronzer. It will turn out perfect jobs, sheet for sheet, with your fastest presses."—Page 7.

2 PLATEN PRESSES—Investigate Kluge possibilities. "Profitable—because of wide range of work possible, small expenditure. Size its only limitation—it will take an oversize sheet when necessary." Will mail complete data.

3 Frapomist ROLLER SPRAY "keeps roller tacky, reduces shrinkage and prevents varnish gumming—it improves halftones—helps overprinting—eliminates mottle—prevents picking—keeps forms clean." Will send full details and proof.

4 4 COLOR ROTARY PRESS—See the new 1939 Meisel 4 color rotary press on page 51. Has interchangeable printing units. Complete information will be mailed on request.

5 Goodyear PRESS BLANKETS—page 8 —"do not bolster, crack or peel; hold their guage; do not beat down or walk from center; are not marred by leader marks." Investigate.

6 Cottrell MAGAZINE PRESSES "will print and fold quality magazine pages at speeds up to 750 feet of web per minute." See page 27. Will send detailed information about latest presses.

7 Paisley SPRAY—"Low priced yet a definitely better solution—a pure vegetable product—will not fade delicate inks. Best for carton work, gloss inks, over-printing. A grade for every purpose." Page 67. Write.

8 TYMPAN PAPER—Try samples of Riegel Tympans. "Drumhead, ready-cut and scored treated top sheet—Certifine, low priced, strong, ideal for short runs—Treated jute, reliable, good for long runs."

9 Non-Scratch HALFTONE BLACK—"New Star is blacker in the solids yet cleaner and smoother in the highlights and middletones—is more scratch-proof—dries quicker." See page 10.

10 Pulsolator AUTOMATIC OIL LUBRICATION—"used as standard equipment by leading press builders—installed by cost minded printers. Increases production time—eliminates bearing failure—controls maintenance costs. Will send bulletin (No. B30)."

11 ROLLERS—"for the right kind of roller to produce any specific type of work. Hundreds of formulas—ink, stocks, humidity and temperature changes have all been considered—investigate Ideal."

12 NEWSPAPER PRESSES—"for straight black production or color—in printing large dailies or small weeklies investigate Duplex." Will furnish information on Super Duty Units, Unitubular, Tubular, or Flat Bed.

13 PRESS BLANKETS—DRAW SHEETS. "Vulcan non-felt press blankets are especially good for picture pages—have moderately hard top under which is layer of cork. Suitable for average plate." Also felt blankets and draw sheets. Page 49. Write for further details.

14 AUTOMATIC CYLINDER PRESSES —manufactured by Miller are shown on page 11. Further information on the "Two Color," "Major," "High Speed" or "Simplex" available on request. Use the return card.

15 BLACK INKS—"For your modern high-speed presses investigate Champion Blacks." Champion's "Halftone," "Super" and "Book" are featured on page 64. Further facts on request.

16 BRONZER — With the Milwaukee Bronzer, "clean, solidly covered, highly lustrous metallic impressions are easily delivered at any speed on any letter or offset press. It is simple, portable and versatile." See page 50. Ask for details.

17 INKS for all purposes. See page 37. "Investigate Huber inks for your various jobs, whether offset, newspaper, letterpress, carton, bag or others."

18 COMMERCIAL PRESSES—Investigate Miehle presses featured on page 31 as offering "exceptional performance with ease of operation, accuracy, safety, speed and economy." Further information on request.

19 REELS, PRESSES, FOLDERS—Hoe equipment for the whole newspaper printing job—from plate making operations to folding—featured on page 6 as "offering perfect coordination of the various mechanical steps." More detailed information available.

20 BEARINGS "for every piece of printing equipment. Bearings that mean endurance, precision and high capacity." Featured page 12 in a rotary sheet press by S.K.F.

21 PRESS BLANKETS—For "lower press blanket costs" investigate Fitz Livecork blankets. Send in your requirements and manufacturer will mail complete information and prices. Try them.

22 ROLLERS—"Vulcan Gelastic Rollers stay accurate because they are entirely free from swelling, shrinking, chipping and cracking—are unaffected by inks, oils, driers and washes." Write for information.

23 PASTERS AND TENSIONS—Cline high speed pasters and automatic tensions are used on color rotogravure and high speed newspaper presses to maintain color register. Further details on request.

24 BEARINGS—"Printing and impression cylinder of the Buffalo Evening News mounted on Timken bearings—operating precision insured even at tremendous speeds. Friction greatly reduced."

25 COMMERCIAL AND SMALL NEWSPAPER PRESSES—The Webendorfer line featured on page 39. Full information mailed on request. Use the return card.

COMPOSING ROOM

26 COMPOSING MACHINES — Descriptive booklet on the new Linograph "50" available on request. Described and pictured on page 47. "Handles standard mats—top speed production on straight matter" and other features.

27 MITERING MACHINE—Craftsmen Machinery Company's new "Superior" Mitering Machine with tilt-lever bedlock—improved gauge bar, precision gauge and knife-holder. Catalog available on request. See page 17.

This card must be filled out completely in order to secure the literature or information you request. Please circle only bulletins you particularly want.

PRINTING EQUIPMENT ENGINEER — August

Without obligation please have the manufacturers send me literature or information circled below. (These numbers correspond to numbers on descriptive paragraphs)

1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20
21	22	23	24	25	26	27	28	29	30	31	32	33	34	35	36	37	38	39	40
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61	62	63																	

PRINT YOUR NAME AND ADDRESS

NAME.....TITLE.....DEPT.....

FIRM NAME.....

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28 PROOF PRESS—Complete information on the low cost Vanderbook No. 24 precision proof press, featured on the inside back cover, is available to you. Use the return card.

29 LUDLOW SYSTEM is described on page 5 with illustrations. Full information regarding features of the Ludlow system "whole-heartedly endorsed by users" will be gladly sent on request.

30 CHASES—Amsco electric-welded chases "assure you quicker and better lock-up because of their absolute accuracy and squareness—their quality and strength. There is one for every requirement."

31 TYPESETTING MACHINE — The Mergenthaler model 30 mixer linotype has eight magazine capacity, linotype quick mixing and one-turn shift. See the inside front cover. Literature sent on request.

32 TYPE SPECIMENS—Legend featured on page 61 by the Bauer Type Foundry. Will gladly mail type specimens. Send for them today—use the return card.

33 HEATING UNIT for linotype pots replaces two parts now in use. "Heats quickly—lasts longer—easier to install." Descriptive circular on request.

34 Rouse VERTICAL ROTARY MITERER—"cuts 1000 miters an hour from strip material. Where many boxes or ornamental borders are needed it is essential." Complete information, sample border designs and prices mailed.

35 COMPOSING MACHINE MOTORS —Cushman Offset Motor "will operate your typesetting machine at its maximum capacity with less cost. Its manufacturers were pioneers in direct drive." Further information mailed.

36 SAW TRIMMER — "Milwaukee's C. & G. Saw Trimmer is versatile—the angle gauge and see-through guard add much to its convenience." See page 57. Additional features mailed.

37 Improved design MAGAZINES for standard model linotypes—"So low they pay for themselves through increased production and time saved." Buy and sell new and used typesetting equipment. Catalog available.

38 BASES—"Challenge Sta-Rite Bases save time—no fumbling, no misfits, no delay. Sturdily reinforced." Write for full particulars and prices. See page 58. Use the return card.

39 TYPESETTING MACHINE — Featured on the back cover by Intertype recent sale of 12 Intertypes to Government Printing Office. These machines are equipped with quadding and centering device. Full description on request.

40 REPLACEMENT PARTS for linotypes and intertypes—offered by Reid Bros.—"will effect real economy in maintenance of your composing room." Send for illustrated catalog.

41 KEYBOARD ROLLS—See page 53. "Machinists like them because of their constant qualities." Order trial pair.

42 Improved EJECTOR BLADE CONTROLLER featured on page 45. Details on request.

43 BASE—Will send complete information about Blatchford Base—"the big word in plate mounting."

44 SAWS—See page 55. "Easy to operate. Fast and accurate." Write for full information.

STEREOTYPE DEPARTMENT

45 DRY MATS—Try Wood Dry Mats "for whiter highlights and blacker shadows. Made especially for newspaper production—they maintain true tonal balance." Will gladly send sample package.

46 Pony AUTOPLATE—See page 35. Users say why they like it. Printed matter available about Standard or Heavy-Duty Pony Autoplates. Investigate further —Wood.

47 FLEX DRY MATS "are particularly good for news type pages. They take a clean, deep impression and make a good mold at comparatively low pressures." Will send samples.

48 MATRIX PRESS—Check the Directomat features listed on page 62. "Fast—easy to operate—instant control—eliminates stretch—improves register." Further details will be sent to you.

49 PACKING FELT—"Perfected A.P.S. gummed packing felts stick only where intended and when moistened—do not drop off the mat after scorching." A.P.S. will send complete details and working samples.

50 FLAT CASTERS—Hammond Easy-kasters — featured on page 55. "Balanced rolling bed, automatic clamping, automatic change from shell to type-high." Further details mailed.

51 BACKING FELT—"Flecto", Eastern Newspaper Supply's gummed backing felt, "is successfully used on all dry mats." Free samples on request.

52 MAT SCORCHER—See the Form-O-Scorch on page 67. American Publishers Supply will send literature on request.

53 DRY MATS—"For dependable stereotyping rely on Certified mats." Will send samples. Advertisement on page 49. Use the return card.

54 FORMERS—"Four great New York papers have changed to minimum width newsprint. Are using Stahi formers and enjoy uniform casting levels at maximum dry mat shrinkages." See page 3. Will send further information.

55 DRY MATS—"If you have decided to go to narrower newsprint roll and do not want to sacrifice good printing, try Burgess Dry Mats." Will send samples.

56 PAR FOR PRINTERS—Standards of Production. Every mechanical and production executive should have access to this valuable book. See page 43 and write for further information.

MISCELLANEOUS

57 CUTTERS—Seybold precision automatic clamp paper cutters "assure precision accuracy, speed and safety, with increased production and low cost operation." See page 29. Additional information mailed.

58 ZINC—The laboratories of the Atlantic Zinc Works assure the quality of Zomo Zinc and A-Z Alloy. Let them solve your engraving metal problems.

59 MOTORS—"Kimble specializes in motors for the printing field." Will send literature to show where special Kimble motors can aid your mechanical production.

60 CUT MOUNTING TAPE—"Plate-Tak"—Free samples sent on request by Eastern Newspaper Supply.

61 TYPE METAL—"Printing plants all over the country forestall metal trouble by relying on Imperial and the Plus Plan to keep their metal supply in first class order." Full details sent.

62 ZINC—"Edes is prepared to meet any emergency demand for zinc at any time. Their product is uniformly dependable. Edes Hard Matrix Zinc recommended for matrix work."

63 CUT MOUNTING CEMENT — Booth's Zink Cut Cement is economical because it is at its best when sparingly used. Prices listed on page 53. Descriptive literature sent on request.

Check off the literature or information you want on reverse side. Postpaid. No obligation.

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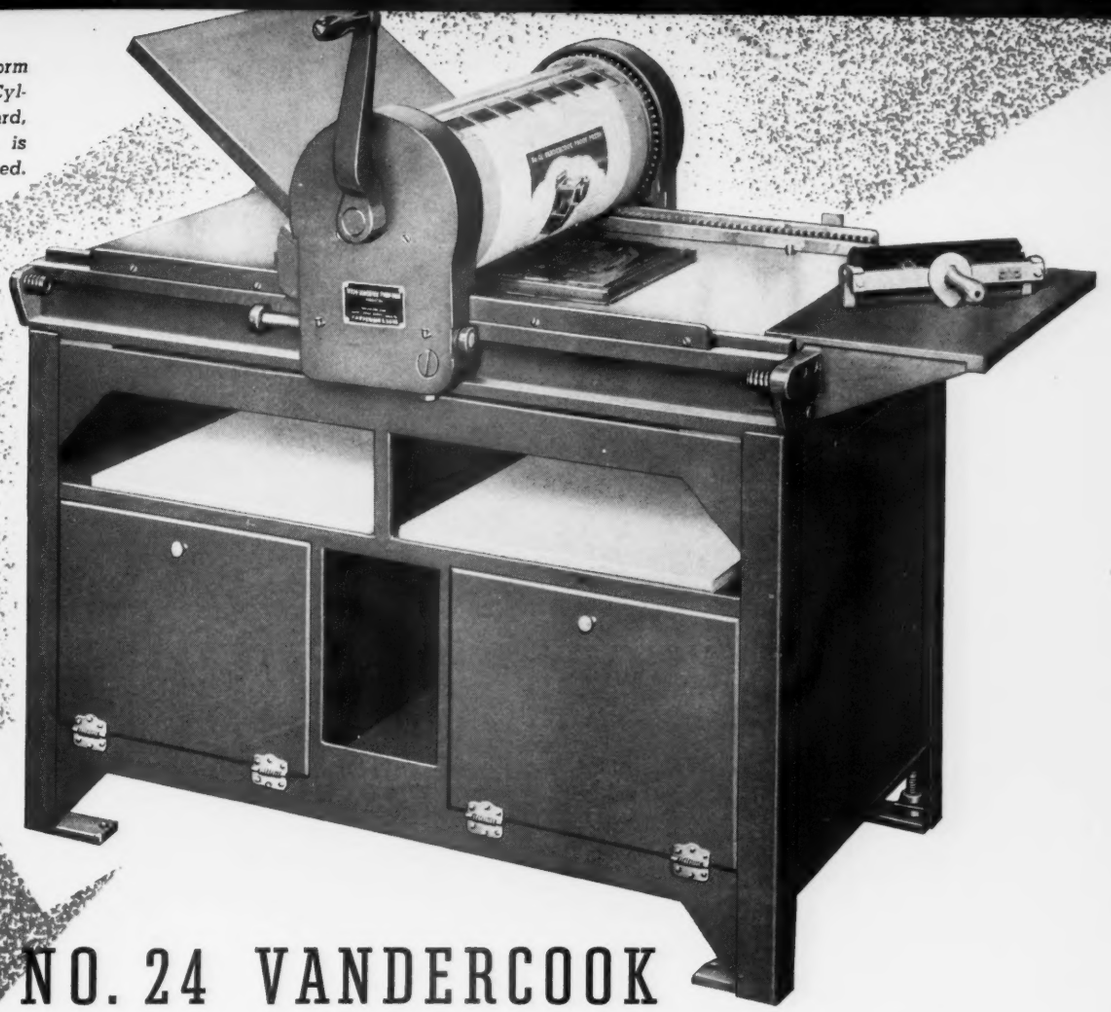


No. 24 Vandercook takes a form 23" x 24½". It has Automatic Cylinder Trip, Grippers, Feed Board, and Side Guide. Impression is positive and register is guaranteed.

NEW

NO. 24 VANDERCOOK

LOW COST PRECISION PROOF PRESS

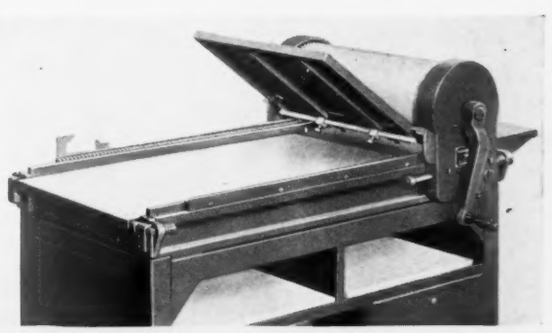
Printers and publishers who have not installed *large size* proof presses because of the investment need wait no longer.

The No. 24 Vandercook Proof Press is priced so low that it can profitably fit into the small composing room budget — or serve well as reserve equipment in the larger plants — with hardly noticeable investment.

No. 24 Vandercook is guaranteed to print perfectly, a halftone 23" x 24½" — the capacity of the press. It is equipped with Automatic Cylinder Trip, Grippers, Feed Board, and Side Guide. Automatic Safety Grippers are below printing line and will not damage misplaced forms.

Impression equals that of the best photo-engravers' presses. Quality of impression makes the No. 24 Vandercook the logical, inexpensive press for checking forms or for accurate premakeready. Forms in job and small automatic press chases may be proved after they are locked.

The No. 24 Vandercook has many features found in no other low priced proof press. Complete information and prices are available upon request. Write now. There is no obligation to you.

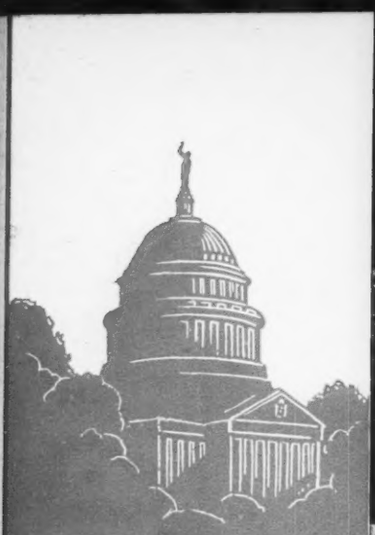


Traveling Feed Board Facilitates Feeding.

VANDERCOOK & SONS

Main Office and Factory

Eastern Branch



New Library of Congress Building, Washington, D. C., in which twelve new Streamlined Intertypes will be installed

12 MORE INTERTYPE
FOR GOVERNMENT PRINTING OFFIC

Twelve modern Streamlined Intertypes with seven fonts of matrices have just been ordered by the Govern ment Printing Office for the new Library of Congres Building, Washington, D. C. This is the third time in the last three years that the world's largest printin establishment has chosen modern Intertype machines.

The order includes four eight-magazine mixer machines and eight six-magazine non-mixers; and, like all other Intertypes purchased by the Government Printing Office, all twelve of these machines will be equipped with the Intertype Automatic Quadding and Centering Device.

The most modern equipment available is being purchased for the new Library of Congress Printing Department, in whic Intertypes will be used exclusively. Wit this installation, twenty-three Intertype will be in operation by the United State Government Printing Office.

Twenty-two other government printin offices in all parts of the world now us Intertypes. Write INTERTYPE, Brookly for details about these modern machines.

VOGUE EXTRA BOLD AND BOOKFACE

Step Ahead, Stay Ahead with Intertype